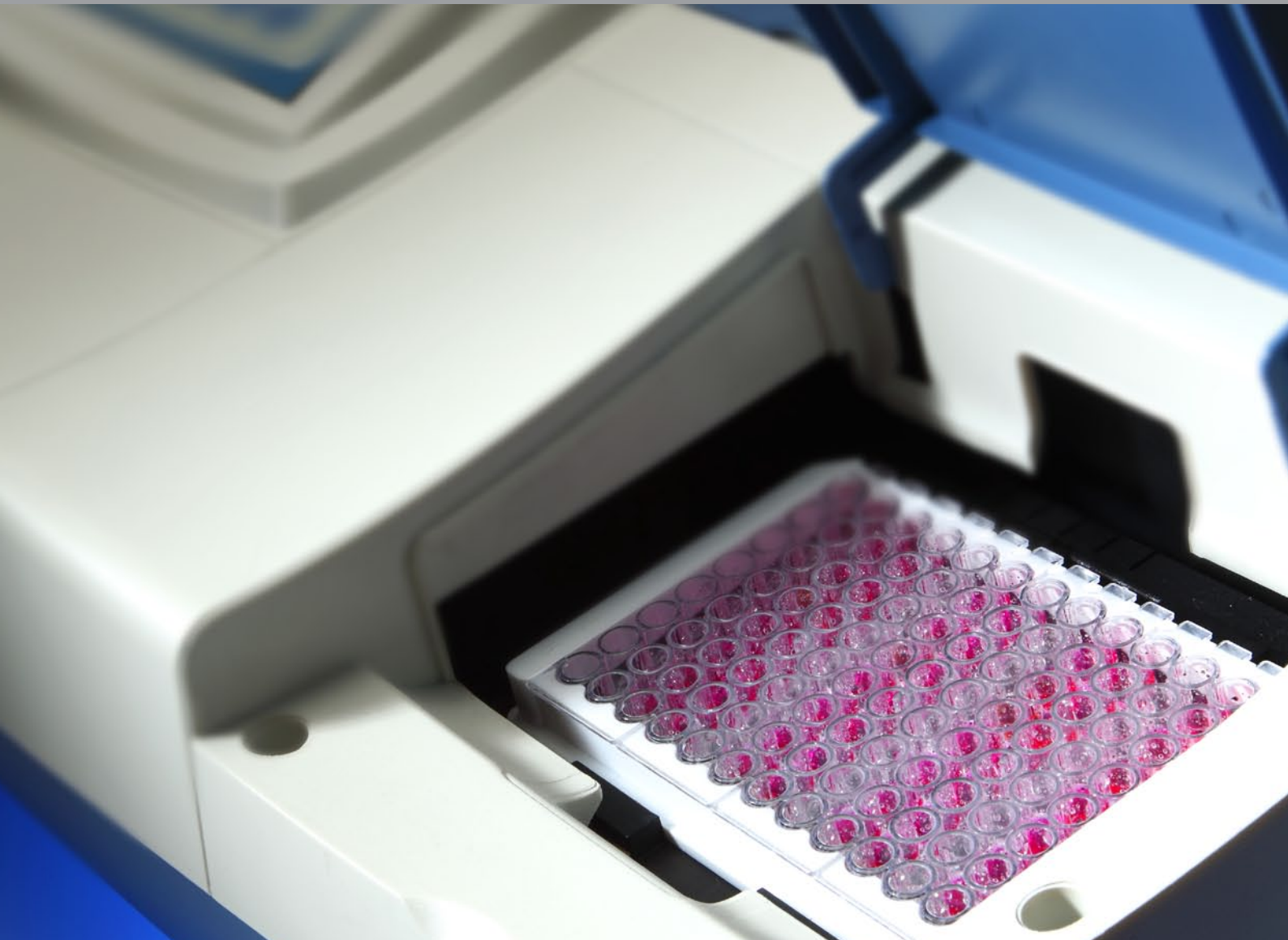


# MICROBIOLOGY

Smart identification and  
antibiotic susceptibility  
determination system



MIKROLATEST® MIC  
MIKROLATEST® BP  
MIKROLATEST® ID  
MIKROLA®



Erba Lachema s. r. o., a traditional producer and supplier of diagnostic products for clinical laboratories, offers an advanced range of products for microbial identification and antibiotic susceptibility determination.

## Contents:

### MIKROLATEST® MIC



2

High quality system for antibiotic susceptibility testing based on minimal inhibitory concentration determination designed for visual or automated reading.

### MIKROLATEST® BP

6

Economical system for antibiotic susceptibility testing based on EUCAST breakpoint determination designed for visual or automated reading.

### MIKROLATEST® ID

9

User-friendly kits for microbial identification using traditional biochemical tests designed for visual or automated reading.

### MIKROLA® Softwares

34

Smart microbiological system for computer aided evaluation of MIKROLATEST ID, MIKROLATEST BP and MIKROLATEST MIC tests and data management. System for susceptibility interpretation according to EUCAST and CLSI guidelines.

### MIKROLA® Readers

35

Handy photometers for automated reading and evaluation of MIKROLATEST MIC, MIKROLATEST BP and MIKROLATEST MIC. Applicable for immunology as well.

### MIKROLA® Accessories

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Additional tools intended to ease the use of MIKROLATEST® products.



## Minimum inhibitory concentration AST kits

### Principle of the method:

This method allows quantitative determination of minimum inhibitory concentration of antibiotics in preselected panels.

Testing is based on broth microdilution method that measures quantitatively in vitro activity of an antimicrobial agent against a bacterial isolate. The minimal inhibitory concentration (MIC) is determined from twofold dilution series (8 concentrations) as the lowest concentration of an antimicrobial agent that prevents visible growth of a microorganism.

Determination of MIC enables interpretation into three categories: sensitive, intermediate or resistant according to the relevant interpretation system (EUCAST: [www.eucast.org](http://www.eucast.org), or CLSI: [www.clsi.org](http://www.clsi.org))

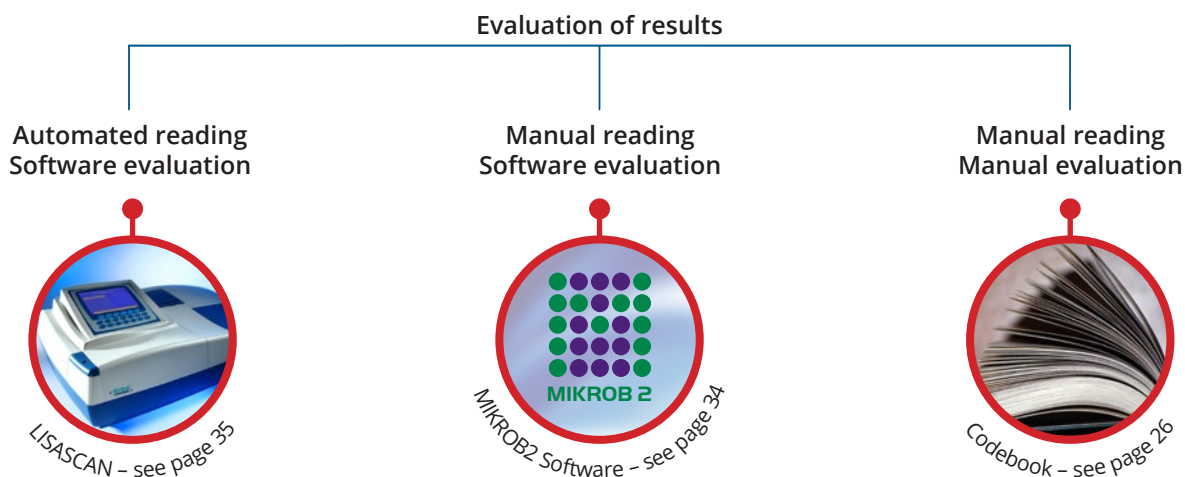
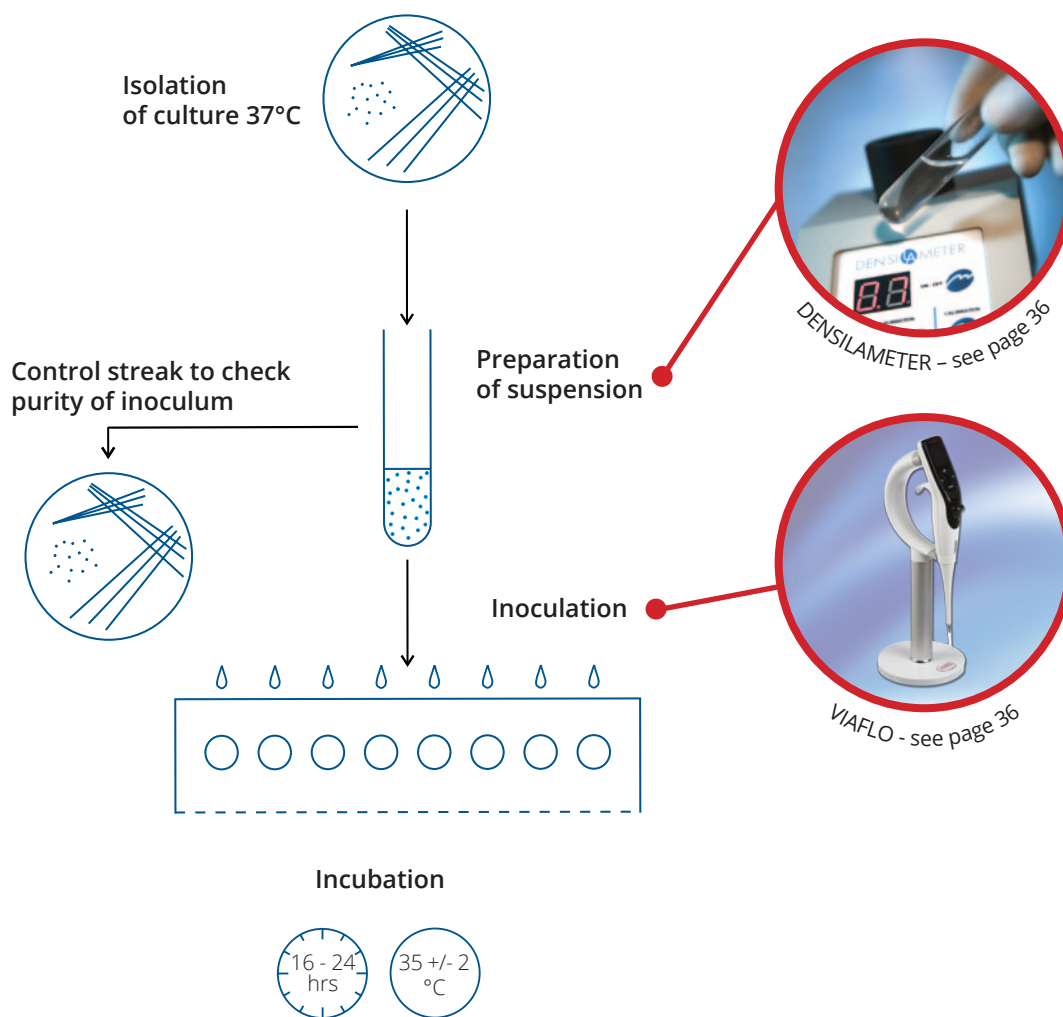
These categories are characterised by EUCAST\* as follows:

- Microorganism is defined as susceptible by a level of antimicrobial activity associated with a high probability of therapeutic success.
- Microorganism is defined as intermediate by a level of antimicrobial activity associated with uncertain therapeutic effect.
- Microorganism is defined as resistant by a level of antimicrobial activity associated with a high probability of therapeutic failure.

In each test system there is a growth control.

\* [www.eucast.org](http://www.eucast.org)





## Available panels

### MIC G-I

The kit is designed to test antimicrobial susceptibility of bacteria from *Enterobacteriaceae* family.

| AMP        | AMS                      | CFZ       | CXM         | AZT       | GEN        | AMK      | COL      | T/S                               | CIP           | CMP             | TET          |
|------------|--------------------------|-----------|-------------|-----------|------------|----------|----------|-----------------------------------|---------------|-----------------|--------------|
| ampicillin | ampicillin/<br>sulbactam | cefazolin | cefturoxime | aztreonam | gentamicin | amikacin | colistin | trimethoprim/<br>sulfamethoxazole | ciprofloxacin | chloramphenicol | tetracycline |
| 128        | 128/64                   | 16        | 64          | 16        | 32         | 64       | 16       | 4/76                              | 8             | 32              | 32           |
| 64         | 64/32                    | 8         | 32          | 8         | 16         | 32       | 8        | 2/38                              | 4             | 16              | 16           |
| 32         | 32/16                    | 4         | 16          | 4         | 8          | 16       | 4        | 1/19                              | 2             | 8               | 8            |
| 16         | 16/8                     | 2         | 8           | 2         | 4          | 8        | 2        | 0.5/9.5                           | 1             | 4               | 4            |
| 8          | 8/4                      | 1         | 4           | 1         | 2          | 4        | 1        | 0.25/4.75                         | 0.5           | 2               | 2            |
| 4          | 4/2                      | 0.5       | 2           | 0.5       | 1          | 2        | 0.5      | 0.12/2.38                         | 0.25          | 1               | 1            |
| 2          | 2/1                      | 0.25      | 1           | 0.25      | 0.5        | 1        | 0.25     | 0.06/1.19                         | 0.12          | 0.5             | 0.5          |
| 1          | 1/0.5                    | 0.12      | 0.5         | 0.12      | 0.25       | 0.5      | 0.12     | 0.03/0.6                          | 0.06          | 0.25            | control      |

### MIC G-II

This kit is designed to test susceptibility to antibiotics used in treatment of serious infections caused by bacteria from *Enterobacteriaceae* family especially in hospitalized patients.

| PIP          | PIT                         | CTX        | CAZ         | CPZ          | CPS                        | CEP      | MER       | ERT      | TGC         | NET        | TOB        |
|--------------|-----------------------------|------------|-------------|--------------|----------------------------|----------|-----------|----------|-------------|------------|------------|
| piperacillin | piperacillin/<br>tazobactam | cefotaxime | ceftazidime | cefoperazone | cefoperazone/<br>sulbactam | cefepime | meropenem | etapenem | tigecycline | netilmicin | tobramycin |
| 128          | 128/4                       | 8          | 16          | 64           | 64/32                      | 16       | 16        | 2        | 8           | 16         | 8          |
| 64           | 64/4                        | 4          | 8           | 32           | 32/16                      | 8        | 8         | 1        | 4           | 8          | 4          |
| 32           | 32/4                        | 2          | 4           | 16           | 16/8                       | 4        | 4         | 0.5      | 2           | 4          | 2          |
| 16           | 16/4                        | 1          | 2           | 8            | 8/4                        | 2        | 2         | 0.25     | 1           | 2          | 1          |
| 8            | 8/4                         | 0.5        | 1           | 4            | 4/2                        | 1        | 1         | 0.12     | 0.5         | 1          | 0.5        |
| 4            | 4/4                         | 0.25       | 0.5         | 2            | 2/1                        | 0.5      | 0.5       | 0.06     | 0.25        | 0.5        | 0.25       |
| 2            | 2/4                         | 0.12       | 0.25        | 1            | 1/0.5                      | 0.25     | 0.25      | 0.03     | 0.12        | 0.25       | 0.12       |
| 1            | 1/4                         | 0.06       | 0.12        | 0.5          | 0.5/0.25                   | 0.12     | 0.12      | 0.015    | 0.06        | 0.12       | control    |

### MIC URINE

The kit is designed to test antimicrobial susceptibility of bacteria isolated from urine and urinary tract (mainly *Enterobacteriaceae* family).

| AMP        | AMS                      | CFZ       | CXM         | MER       | GEN        | AMK      | T/S                               | NOR         | CIP           | TGC         | NFT            |
|------------|--------------------------|-----------|-------------|-----------|------------|----------|-----------------------------------|-------------|---------------|-------------|----------------|
| ampicillin | ampicillin/<br>sulbactam | cefazolin | cefturoxime | meropenem | gentamicin | amikacin | trimethoprim/<br>sulfamethoxazole | norfloxacin | ciprofloxacin | tigecycline | nitrofurantoin |
| 128        | 128/64                   | 16        | 64          | 16        | 32         | 64       | 4/76                              | 8           | 8             | 8           | 128            |
| 64         | 64/32                    | 8         | 32          | 8         | 16         | 32       | 2/38                              | 4           | 4             | 4           | 64             |
| 32         | 32/16                    | 4         | 16          | 4         | 8          | 16       | 1/19                              | 2           | 2             | 2           | 32             |
| 16         | 16/8                     | 2         | 8           | 2         | 4          | 8        | 0.5/9.5                           | 1           | 1             | 1           | 16             |
| 8          | 8/4                      | 1         | 4           | 1         | 2          | 4        | 0.25/4.75                         | 0.5         | 0.5           | 0.5         | 8              |
| 4          | 4/2                      | 0.5       | 2           | 0.5       | 1          | 2        | 0.12/2.38                         | 0.25        | 0.25          | 0.25        | 4              |
| 2          | 2/1                      | 0.25      | 1           | 0.25      | 0.5        | 1        | 0.06/1.19                         | 0.12        | 0.12          | 0.12        | 2              |
| 1          | 1/0.5                    | 0.12      | 0.5         | 0.12      | 0.25       | 0.5      | 0.03/0.6                          | 0.06        | 0.06          | 0.06        | control        |

### MIC NEFERM

The kit is designed to test antimicrobial susceptibility of non-fermenting bacteria.

| AMP                      | PIP          | PIT                         | CAZ         | AZT       | MER       | GEN        | AMK      | COL      | CIP           | TGC         | T/S                               |
|--------------------------|--------------|-----------------------------|-------------|-----------|-----------|------------|----------|----------|---------------|-------------|-----------------------------------|
| ampicillin/<br>sulbactam | piperacillin | piperacillin/<br>tazobactam | ceftazidime | aztreonam | meropenem | gentamicin | amikacin | colistin | ciprofloxacin | tigecycline | trimethoprim/<br>sulfamethoxazole |
| 128/64                   | 128          | 128/4                       | 16          | 16        | 16        | 32         | 64       | 16       | 8             | 8           | 4/76                              |
| 64/32                    | 64           | 64/4                        | 8           | 8         | 8         | 16         | 32       | 8        | 4             | 4           | 2/38                              |
| 32/16                    | 32           | 32/4                        | 4           | 4         | 4         | 8          | 16       | 4        | 2             | 2           | 1/19                              |
| 16/8                     | 16           | 16/4                        | 2           | 2         | 2         | 4          | 8        | 2        | 1             | 1           | 0.5/9.5                           |
| 8/4                      | 8            | 8/4                         | 1           | 1         | 1         | 2          | 4        | 1        | 0.5           | 0.5         | 0.25/4.75                         |
| 4/2                      | 4            | 4/4                         | 0.5         | 0.5       | 0.5       | 1          | 2        | 0.5      | 0.25          | 0.25        | 0.12/2.38                         |
| 2/1                      | 2            | 2/4                         | 0.25        | 0.25      | 0.25      | 0.5        | 1        | 0.25     | 0.12          | 0.12        | 0.06/1.19                         |
| 1/0.5                    | 1            | 1/4                         | 0.12        | 0.12      | 0.12      | 0.25       | 0.5      | 0.12     | 0.06          | 0.06        | control                           |



## MIC STAPHY

The kit is designed to test antimicrobial susceptibility of staphylococci.

| PEN        | COX       | ERY          | CLI         | LIZ       | CMP             | TET          | CIP           | T/S                              | GEN        | VAN        | NFT            |
|------------|-----------|--------------|-------------|-----------|-----------------|--------------|---------------|----------------------------------|------------|------------|----------------|
| penicillin | cefoxitin | erythromycin | clindamycin | linezolid | chloramphenicol | tetracycline | ciprofloxacin | trimehtoprim/<br>sulfamehtoxazol | gentamicin | vancomycin | nitrofurantoin |
| 4          | 16        | 8            | 4           | 16        | 32              | 8            | 8             | 4/76                             | 16         | 16         | 128            |
| 2          | 8         | 4            | 2           | 8         | 16              | 4            | 4             | 2/38                             | 8          | 8          | 64             |
| 1          | 4         | 2            | 1           | 4         | 8               | 2            | 2             | 1/19                             | 4          | 4          | 32             |
| 0.5        | 2         | 1            | 0.5         | 2         | 4               | 1            | 1             | 0.5/9.5                          | 2          | 2          | 16             |
| 0.25       | 1         | 0.5          | 0.25        | 1         | 2               | 0.5          | 0.5           | 0.25/4.75                        | 1          | 1          | 8              |
| 0.12       | 0.5       | 0.25         | 0.12        | 0.5       | 1               | 0.25         | 0.25          | 0.12/2.38                        | 0.5        | 0.5        | 4              |
| 0.06       | 0.25      | 0.12         | 0.06        | 0.25      | 0.5             | 0.12         | 0.12          | 0.06/1.19                        | 0.25       | 0.25       | 2              |
| 0.03       | 0.12      | 0.06         | 0.03        | 0.12      | 0.25            | 0.06         | 0.06          | 0.03/0.6                         | 0.12       | 0.12       | control        |

## MIC G+

The kit is designed to test antimicrobial susceptibility of Gram-positive bacteria: streptococci A,B,C, G, Streptococcus pneumoniae and enterococci.

| PEN        | AMP        | ERY          | CLI         | LIZ       | CMP             | TET          | T/S                              | GEN        | VAN        | TEC         | NFT            |
|------------|------------|--------------|-------------|-----------|-----------------|--------------|----------------------------------|------------|------------|-------------|----------------|
| penicillin | ampicillin | erythromycin | clindamycin | linezolid | chloramphenicol | tetracycline | trimehtoprim/<br>sulfamehtoxazol | gentamicin | vancomycin | teicoplanin | nitrofurantoin |
| 8          | 16         | 8            | 16          | 16        | 32              | 32           | 4/76                             | 128        | 16         | 16          | 128            |
| 4          | 8          | 4            | 8           | 8         | 16              | 16           | 2/38                             | 16         | 8          | 8           | 64             |
| 2          | 4          | 2            | 4           | 4         | 8               | 8            | 1/19                             | 8          | 4          | 4           | 32             |
| 1          | 2          | 1            | 2           | 2         | 4               | 4            | 0.5/9.5                          | 4          | 2          | 2           | 16             |
| 0.5        | 1          | 0.5          | 1           | 1         | 2               | 2            | 0.25/4.75                        | 2          | 1          | 1           | 8              |
| 0.25       | 0.5        | 0.25         | 0.5         | 0.5       | 1               | 1            | 0.12/2.38                        | 1          | 0.5        | 0.5         | 4              |
| 0.12       | 0.25       | 0.12         | 0.25        | 0.25      | 0.5             | 0.5          | 0.06/1.19                        | 0.5        | 0.25       | 0.25        | 2              |
| 0.06       | 0.12       | 0.06         | 0.12        | 0.12      | 0.25            | 0.25         | 0.03/0.6                         | 0.25       | 0.12       | 0.12        | control        |

| Type                               | Cat. nr. | Product                      | Nr. of exam. | Reagent req. | Susp. m. req. |
|------------------------------------|----------|------------------------------|--------------|--------------|---------------|
| Kits                               | 10020295 | MIC G-I                      | 10           | no           | yes           |
|                                    | 10020296 | MIC G-II                     | 10           | no           | yes           |
|                                    | 10020299 | MIC URINE                    | 10           | no           | yes           |
|                                    | 10020297 | MIC NEFERM                   | 10           | no           | yes           |
|                                    | 10020298 | MIC STAPHY                   | 10           | no           | yes           |
|                                    | 10020300 | MIC G+                       | 10           | no           | yes           |
| Other req. items<br>(not included) | 10020337 | Suspension medium for MIC    | 30           | -            | -             |
|                                    | 10020338 | Suspension medium for MIC G+ | 30           | -            | -             |

## Coming soon!

### Individual strips with antibiotics to create your own combination

You will have a possibility soon to combine your own MIC panel from individual antibiotic strips as per your need. 8 concentrations for each antibiotic.



## Breakpoint AST kits

### Principle of the method:

Testing is based on bacterial growth in breakpoint concentrations of antibiotics. Breakpoints refer to standards of European Committee for Antimicrobial Susceptibility Testing – EUCAST issued in January 2011. Most of the antibiotics are represented by two (in exceptional cases one or three) breakpoint concentrations which enable interpretation to three categories: sensitive, intermediate or resistant.

### These categories are characterised by EUCAST\* as follows:

Microorganism is defined as sensitive by a level of antimicrobial activity associated with a high probability of therapeutic success, Microorganism is defined as intermediate by a level of antimicrobial activity associated with uncertain therapeutic effect, Microorganism is defined as resistant by a level of antimicrobial activity associated with a high probability of therapeutic failure.

In each test system there is a growth control.

\* [www.eucast.org](http://www.eucast.org)

### Available panels:

#### SENSILATEST G-I

The kit is designed to test antimicrobial susceptibility of bacteria from Enterobacteriaceae family. The kit contains 60 detection strips. It enables prognosis of ESBL production. We recommend to use SENSILatest G-I together with SENSILATEST G-II to test susceptibility of antibiotics aimed for treatment of serious infections especially in hospitalized patients.

| Growth control | Ampicillin | Ampicillin /sulbactam         | Cefalexin | Cefuroxime | Cefotaxime |          | Colistin |
|----------------|------------|-------------------------------|-----------|------------|------------|----------|----------|
| GC             | AMP        | AMS                           | CEX       | CXM        | CTX        | CTX      | COL      |
|                | 8          | 8/4                           | 16        | 8          | 1          | 2        | 2        |
| Ciprofloxacin  |            | Trimetoprim /sulfamethoxazole |           | Gentamicin |            | Amikacin |          |
| CIP            | CIP        | TS                            | TS        | GEN        | GEN        | AMK      | AMK      |
| 0,5            | 1          | 2/38                          | 4/76      | 2          | 4          | 8        | 16       |

#### SENSILATEST G-II

The kit is designed to test antimicrobial susceptibility of bacteria from Enterobacteriaceae family. It enables prognosis of ESBL production. The antibiotics in this kit are aimed for treatment of serious infections especially in hospitalized patients. Antibiotics for less serious infections are included in the kit SENSILatest G-I. The kit contains 60 detection strips.

| Growth control | Piperacillin /tazobactam | Meropenem   |     | Cefepime   |     | Ceftazidime               |     |
|----------------|--------------------------|-------------|-----|------------|-----|---------------------------|-----|
| GC             | PIT                      | MER         | MER | CEP        | CEP | CAZ                       | CAZ |
|                | 16/4                     | 2           | 8   | 1          | 4   | 1                         | 4   |
| Aztreonam      |                          | Tigecycline |     | Netilmicin |     | Ceftazidime / clavulanate |     |
| AZT            | AZT                      | TGC         | TGC | NET        | NET | CZC                       | CZC |
| 1              | 4                        | 1           | 2   | 2          | 4   | 0.25/4                    | 1/4 |

#### SENSILATEST G+

The kit is designed to test antimicrobial susceptibility of Gram-positive bacteria: enterococci and A,B,C,G streptococci. The kit contains 40 detection strips.

| Growth control | Chloramphenicol | Moxifloxacin |     | Linezolid    |            | Ampicillin |     |
|----------------|-----------------|--------------|-----|--------------|------------|------------|-----|
| GC             | CMP             | MOX          | MOX | LIZ          | LIZ        | AMP        | AMP |
|                | 8               | 0.5          | 1   | 2            | 4          | 4          | 8   |
| Tigecycline    |                 | Levofloxacin |     | Erythromycin |            | Penicillin |     |
| TGC            | TGC             | LEV          | LEV | ERY          | ERY        | PEN        | PEN |
| 0.25           | 0.5             | 1            | 2   | 0.25         | 0.5        | 0.25       | 2   |
| Ceftriaxone    |                 | Tetracycline |     | Clindamycin  | Gentamicin | Vancomycin |     |
| CRO            | CRO             | TET          | TET | CLI          | GEN        | VAN        | VAN |
| 0.5            | 1               | 1            | 2   | 0.5          | 256        | 2          | 4   |



### SENSILATEST URINE

The kit is designed to test antimicrobial susceptibility of bacteria isolated from urine tract, especially family Enterobacteriaceae. It enables prognosis of ESBL production. The kit contains 40 detection strips.

| Growth control          | Ampicillin | Amoxicillin/<br>clavulanate      | Piperacillin<br>/tazobactam | Cefotaxime |     | Ceftazidime |                |
|-------------------------|------------|----------------------------------|-----------------------------|------------|-----|-------------|----------------|
| GC                      | AMP        | AMC                              | PIT                         | CTX        | CTX | CAZ         | CAZ            |
|                         | 8          | 8/4                              | 16/4                        | 1          | 2   | 1           | 4              |
| Ceftazidime/clavulanate |            | Gentamicin                       |                             | Amikacin   |     | Norfloxacin |                |
| CZC                     | CZC        | GEN                              | GEN                         | AMK        | AMK | NOR         | NOR            |
| 1/4                     | 4/4        | 2                                | 4                           | 8          | 16  | 0,5         | 1              |
| Ciprofloxacin           |            | Trimetoprim<br>/sulfamethoxazole |                             | Ertapenem  |     | Fosfomycin  | Nitrofurantoin |
| CIP                     | CIP        | T/S                              | T/S                         | ERT        | ERT | FOS         | NFT            |
| 0,5                     | 1          | 2/38                             | 4/76                        | 0,5        | 1   | 32          | 64             |

### SENSILATEST NEFERM

The kit is designed to test antimicrobial susceptibility of non-fermenting bacteria. It enables prognosis of MBL (metallo-beta-lactamase) production. The kit contains 60 detection strips.

| Growth control | Ceftazidime | Cefepime                         | Meropenem |          |     | Amikacin                    |            |
|----------------|-------------|----------------------------------|-----------|----------|-----|-----------------------------|------------|
| GC             | CAZ         | CEP                              | MER       | MER      | MER | AMK                         | AMK        |
|                | 8           | 8                                | 2         | 4        | 8   | 8                           | 16         |
| Ciprofloxacin  |             | Trimetoprim<br>/sulfamethoxazole |           | Colistin |     | Piperacillin<br>/tazobactam | Gentamicin |
| CIP            | CIP         | T/S                              | T/S       | COL      | COL | PIT                         | GEN        |
| 0,5            | 1           | 2/38                             | 4/76      | 2        | 4   | 16/4                        | 4          |

### SENSILATEST STAPHY

The kit is designed to test antimicrobial susceptibility of staphylococci. Possibility of MRSA is indicated. The kit contains 60 detection strips.

| Growth control | Trimetoprim<br>/sulfamethoxazole |              | Tigecycline | Linezolid | Erythromycin |     | Vancomycin |
|----------------|----------------------------------|--------------|-------------|-----------|--------------|-----|------------|
| GC             | T/S                              | T/S          | TGC         | LIZ       | ERY          | ERY | VAN        |
|                | 2/38                             | 4/76         | 0,5         | 4         | 1            | 2   | 2          |
| Ciprofloxacin  | Cefoxitin                        | Fusidic acid | Rifampicin  |           | Clindamycin  |     | Gentamicin |
| CIP            | COX                              | FUS          | RAM         | RAM       | CLI          | CLI | GEN        |
| 1              | 4                                | 1            | 0,0625      | 0,5       | 0,25         | 0,5 | 1          |

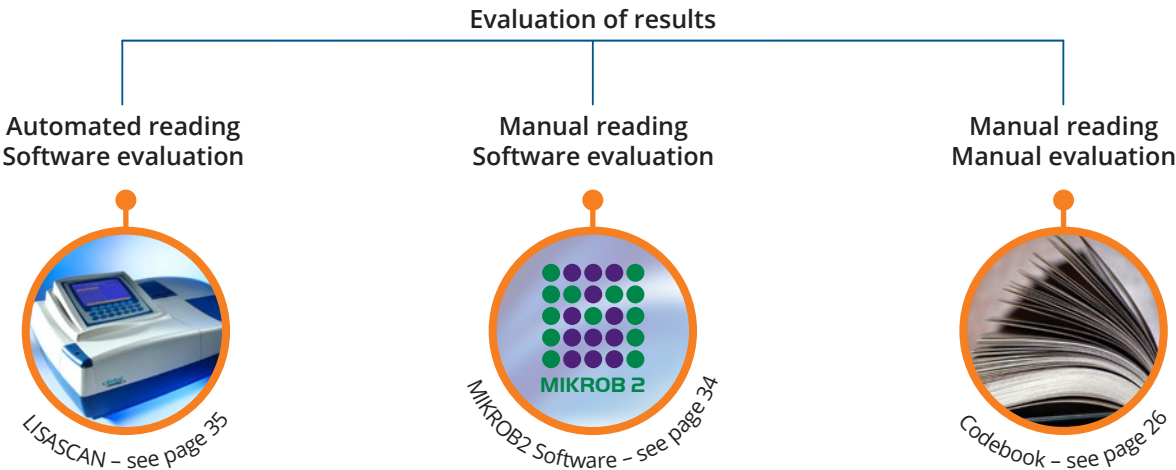
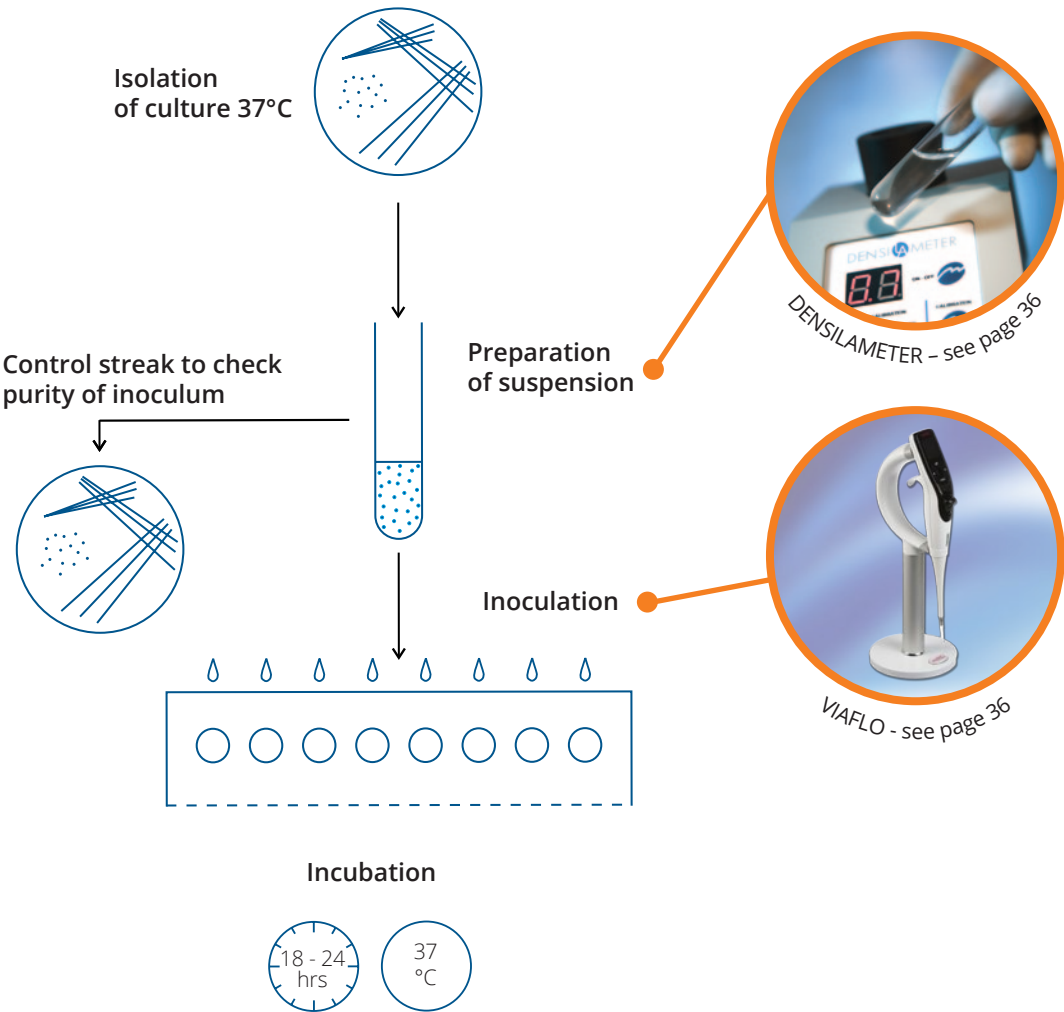


**MIKROLATEST® BP Breakpoint AST kits are represented  
by traditional SENSILATEST line.**

| Type                               | Cat. nr. | Product                              | Nr. of exam. | Reagent req. | Susp. m. req.                |
|------------------------------------|----------|--------------------------------------|--------------|--------------|------------------------------|
| Kits                               | 10020279 | SENSILATEST G-I                      | 60           | no           | yes (only dry form included) |
|                                    | 10020280 | SENSILATEST G-II                     | 60           | no           | yes (only dry form included) |
|                                    | 10020284 | SENSILATEST URINE                    | 40           | no           | yes (only dry form included) |
|                                    | 10020285 | SENSILATEST NEFERM                   | 60           | no           | yes (only dry form included) |
|                                    | 10020283 | SENSILATEST STAPHY                   | 60           | no           | yes (only dry form included) |
|                                    | 10020282 | SENSILATEST G+                       | 40           | no           | yes (only dry form included) |
| Other req. items<br>(not included) | 10020286 | Suspension medium<br>for SENSILATEST | 20           | -            | -                            |

Working procedure

MIKROLATEST® BP



## Identification

Kits MIKROLATEST® ID offer comfortable and reliable way to identify the most important bacteria and yeasts. Tests are placed on divided microplates with 1, 2 or 3 row strips. Each plate then contains strips for identification 12, 6 or 4 strains, respectively. Only a relevant part of the plate, corresponding to the number of examined strains, can be used and the rest can be kept for further use. Reagents, suspension media, paraffin oil and additional tests are supplied separately. Kits, where reagents are not necessary, can be found for most groups of microorganisms. Non-reagent kits bring even more working comfort and save time.

### Non- reagent kits:

ENTEROtest 24 N  
STAPHYtest 24  
EN-COCCUStest  
NEISSERIAtest (suspension medium needed, supplied separately)  
NEFERMtest 24  
STREPTOtest 24 (suspension medium needed, supplied separately)  
CANDIDAtest 21 (suspension medium needed, included in the kit)  
CANDIDA-Screen

### Reagents

Reagents enable to visualize or strengthen the color course of the reaction. The main features of these original reagents are their standardized preparation and optimal composition.

### Paraffin oil, sterilized

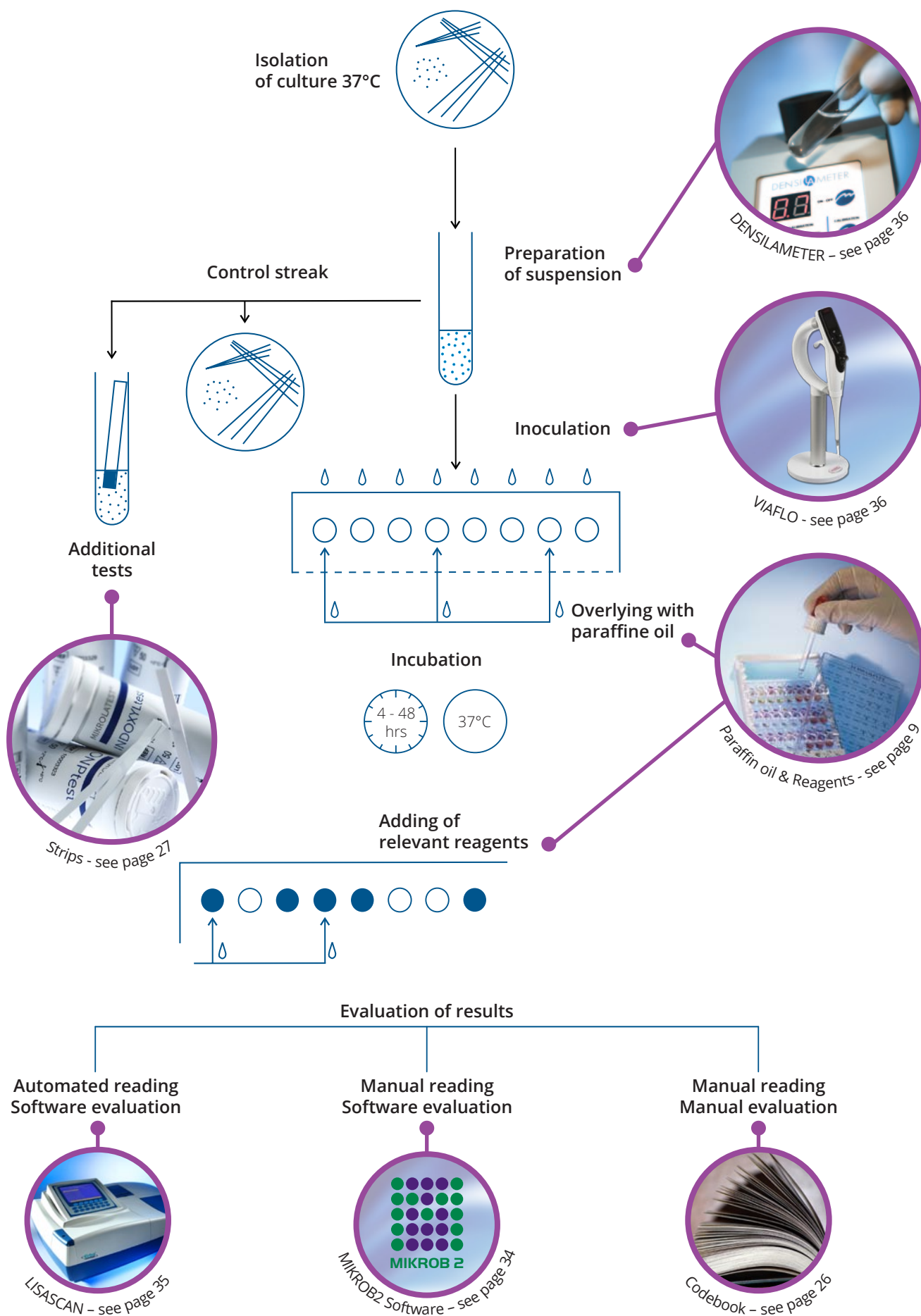
Strong alkaline reactions in some tests (decarboxylases, indole, urease, H<sub>2</sub>S, etc.) may influence the reactions in next wells. This can be avoided by adding the paraffin oil.

### Suspension media

Suspension media are enriched media for preparation of bacterial suspension. They contribute considerably to standardization of the identification procedure ensuring osmotic stabilization, required oxido-reduction potential as well as growth promotion of bacterial strain. Sterilized media are supplied in vials, the content of one vial is used to prepare the suspension of one strain.

## Identification kits
































































































| Kit             | Nr. of tests | Necessary reagents and aids  | Recommended additional strip or disc testing   | Results reading / hours after inoculation          |
|-----------------|--------------|--|--|--|
| ENTEROtest 24 N | 40           | Paraffin oil   | INDOLtest<br>VPtest, reagent for ACETOIN<br>OXItest  | 24 hours   |
| ENTEROtest 16   | 60           | Indol<br>Phenylalanine<br>Paraffin oil   | OXItest<br>ONPtest<br>COLItest<br>VP test, reagent for ACETOIN   | 24 hours   |
| ENTERO-Screen   | 36           | Acetoin<br>Phenylalanin<br>Indol<br>Paraffin oil   | OXItest<br>COLItest<br>PYRAttest, reagent for PYRAttest  | 4 hours  |
| ENTERO-Rapid 24 | 40           | Indol<br>Acetoin<br>Phosphatase<br>Pyr<br>Paraffin oil                                       | OXItest, reagent for OXItest   | 4 hours  |
| STAPHYtest 24   | 40           | Paraffin oil   | OXItest<br>VPtest. reagent for ACETOIN<br>PYRAttest, reagent for PYRtest<br>NOVOBIOCIN disc<br>BACITRACIN S disc   | 24 hours   |
| STAPHYtest 16   | 60           | Phosphatase<br>Nitrate<br>Paraffin oil   | VPtest, reagent for ACETOIN<br>OXItest, reagent for OXItest<br>PYRAttest, reagent for PYRAttest<br>NOVOBIOCIN disc | 24 hours   |
| STREPTOtest 24  | 40           | Suspension medium for<br>STREPTOtest 24<br>Paraffin oil                                      | HIPPURAttest<br>Reagent for HIPPURAttest<br>PYRAttest, reagent for PYRtest<br>VPtest<br>Reagent for ACETOIN        | 24 hours   |
| EN-COCCUStest   | 36           | Paraffin oil   | PYRAttest, reagent for PYRtest   | 24 hours   |
| NEFERMtest 24   | 40           | Paraffin oil   | OXItest, reagent for OXItest<br>OF test  | 24 hours   |
| ANAEROtest 23   | 40           | Indol<br>Nitrate<br>Bromcrezol red<br>Suspension medium for<br>ANAEROtest 23<br>Paraffin oil |  | 24-48 hours  |
| NEISSERIAtest   | 36           | Suspension medium for<br>NEISSERIAtest   | ONPtest<br>OXItest, reagent for OXItest<br>V+K disc  | 4-24 hours   |
| URE-HPtest      | 288          | Paraffin oil   |  | Up to 4 hour<br>depending<br>on urease<br>activity |
| CANDIDAtest 21  | 20           |  | Morphology   | 24 hours   |
| CANDIDA-Screen  | 36           | Paraffin oil   | Morphology   | 24 hours   |
| OFtest          | 288          | Paraffin oil   |  | 2-4 hours  |






## ENTEROtest 24 N





ENTEROtest 24 N is a non-reagent test designed for routine, definitive identification of important strains of family Enterobacteriaceae within 24 hours. The kit contains 24 biochemical tests, which are placed in 3 rows (triple-strips) of a divided microplate. The identification can be supplemented with the tests available in the form of detection strips MIKROLATEST®: OXItest for detection of cytochromoxidase, OFtest to differentiate Enterobacteriaceae and nonfermenting bacteria, INDOLtest for detection of tryptophanase activity and VPtest for detection of acetoin formation. Each kit of ENTEROtest 24 contains 10 microplates, i.e. 40 determinations in total.



| Type                              | Cat. nr. | Product                  | Nr. of exam. | Reagent req. | Susp. m. req. |
|-----------------------------------|----------|--------------------------|--------------|--------------|---------------|
| Kit                               | 10020290 | ENTEROtest 24 N          | 40           | no           | no            |
| Additional tests (optional)       | 10010255 | INDOLtest                | 140          | no           | -             |
|                                   | 10003329 | VPtest                   | 50           | yes          | -             |
|                                   | 10003324 | OXItest                  | 50           | yes          | -             |
|                                   | 10010256 | OFtest                   | 288          | no           | -             |
| Reagents – add. t. (not included) | 10003369 | Reagent for ACETOIN test | 90           | -            | -             |
|                                   | 10003375 | Reagent for OXIDASE test | 250          | -            | -             |
| Other req. items (not included)   | 10003371 | Paraffin oil, sterilized | 150          | -            | -             |

|   |   |   |   |   |   |   |   |  |   |
|---|---|---|---|---|---|---|---|--|---|
| 1 |   | H<br>URE  | G<br>ARG  | F<br>ORN  | E<br>LYS  | D<br>H <sub>2</sub> S   | C<br>SCI  | B<br>MAL   | A<br>ONP  |
|   | ⊕ |   |   |   |   |   |   |   |   |
|   | ⊖ |   |    |   |   |   |   |   |   |
| 2 |   | H<br>SAL  | G<br>SOR  | F<br>MLB  | E<br>CEL  | D<br>LAC  | C<br>TRE  | B<br>MAN   | A<br>GLR  |
|   | ⊕ |   |   |   |   |   |   |   |   |
|   | ⊖ |   |   |   |   |   |   |   |   |
| 3 |   | H<br>DUL  | G<br>ADO  | F<br>ART  | E<br>SUC  | D<br>INO  | C<br>RAF  | B<br>ESL   | A<br>bXY  |
|   | ⊕ |   |   |   |   |   |   |   |   |
|   | ⊖ |   |   |   |   |   |   |   |   |

|   |   |
|---|---|
|   | OXI Test  |
| ⊕ |   |
| ⊖ |    |

|   |  |
|---|--|
|   | OFtest   |
| ⊕ |  |
| ⊖ |  |

|   |   |
|---|---|
|   | VPtest  |
| ⊕ |   |
| ⊖ |   |

|   |  |
|---|--|
|   | INDOL Test   |
| ⊕ |  |
| ⊖ |  |



## Code book / MIKROB software:

*Budvicia aquatica, Buttiarella agrestis, Buttiarella brennerae, Buttiarella ferrugutiae, Buttiarella gaviniae, Buttiarella izardii, Buttiarella noackiae, Buttiarella warmboldiae, Cedecea davisae, Cedecea lapagei, Cedecea neteri, Citrobacter amalonaticus, Citrobacter braakii, Citrobacter farmeri, Citrobacter freundii, Citrobacter gillenii, Citrobacter koseri, Citrobacter murlinae, Citrobacter rodentium, Citrobacter sedlakii, Citrobacter werkmanii, Citrobacter youngae, Cronobacter (Enterobacter) sakazakii, Edwardsiella hoshinae, Edwardsiella ictaluri, Edwardsiella tarda, Enterobacter aerogenes, Enterobacter amnigenus biovar 1, Enterobacter amnigenus biovar 2, Enterobacter asburiae, Enterobacter cancerogenus, Enterobacter cloacae subsp. cloacae, Enterobacter cloacae subsp. dissolvens, Enterobacter gergoviae, Enterobacter hormaechei, Enterobacter kobei, Enterobacter nimipressuralis, Enterobacter pyrinus, Escherichia coli, Escherichia fergusonii, Escherichia hermannii, Escherichia vulneris, Ewingella americana, Hafnia alvei, Hafnia alvei biovar 1, Klebsiella oxytoca, Klebsiella pneumoniae subs. ozaenae, Klebsiella pneumoniae subs. pneumoniae, Klebsiella pneumoniae subs. rhinoscleromatis, Kluyvera ascorbata, Kluyvera cryocrescens, Kluyvera georgiana, Kluyvera intermedia, Leclercia adecarboxylata, Leminorella grimontii, Leminorella richardii, Moellerella wisconsensis, Morganella morganii subs. morganii, Morganella morganii subs. sibonii, Obesumbacterium proteus, Pantoea agglomerans, Pantoea ananatis, Pantoea citrea, Pantoea dispersa, Pantoea punctata, Pantoea stewartii subs. indologenes, Pantoea stewartii subs. stewartii, Pantoea terra, Pragia fontium, Proteus mirabilis, Proteus myxofaciens, Proteus penneri, Proteus vulgaris, Providencia alcalifaciens, Providencia heimbachae, Providencia rettgeri, Providencia rustigianii, Providencia stuartii, Rahnella aquatilis, Raoultella ornithinolytica, Raoultella terrigena, Salmonella bongori, Salmonella enterica ssp. arizonae, Salmonella enterica ssp. diarizonae, Salmonella enterica ssp. enterica, Salmonella enterica ssp. houtenae, Salmonella enterica ssp. salamae, Salmonella serovar enteritidis, Salmonella serovar paratyphi, Salmonella serovar typhi, Serratia entomophila, Serratia ficaria, Serratia fonticola, Serratia grimesii, Serratia liquefaciens, Serratia marcescens, Serratia marcescens biovar 1, Serratia odorifera biogroup 1, Serratia odorifera biogroup 2, Serratia plymuthica, Serratia proteamaculans, Serratia quinivorans, Serratia rubidaea, Shigella boydii, Shigella dysenteriae, Shigella flexneri, Shigella sonnei, Tatumella ptyseos, Trabulsiella guamensis, Yersinia aldovae, Yersinia bercovieri, Yersinia enterocolitica, Yersinia frederiksenii, Yersinia intermedia, Yersinia kristensenii, Yersinia mollaretii, Yersinia pestis, Yersinia pseudotuberculosis, Yersinia rohdei, Yersinia ruckeri, Yokenella regensburgeri*

## OFtest



OFtest is designed for rapid differentiation of fermentative and oxidative glucose metabolism. OFtest is placed in the wells of single microwell-strips of breakable microwell plate. Each kit of OFtest contains 3 microplates, i.e. 288 determinations in total.

| Type                            | Cat. nr. | Product                  | Nr. of exam. | Reagent req. | Susp. m. req. |
|---------------------------------|----------|--------------------------|--------------|--------------|---------------|
| Kit                             | 10010256 | OFtest                   | 288          | no           | no            |
| Other req. items (not included) | 10003371 | Paraffin oil, sterilized | 370          | -            | -             |

|   | OFtest  |
|---|---|
| + |  |
| - |  |

## INDOLtest

INDOLtest is a drop test, which is designed for rapid (5 min) determination of indole that represents a degradation product of bacterial metabolism of tryptophan. It is intended for fast presumptive determination of *E. coli* strains, screening differentiation between indole-positive and indole-negative bacterial genera as well as a required additional test of certain identification kits. The principle of the test is hydrolysis of tryptophan to indole, pyruvate and ammonia. Indole reacts with the substrate that forms a part of the diagnostic zone of INDOLtest, p - dimethylaminocinnamaldehyde (DMACA), while producing a blue-green compound. INDOLtest represents the most sensitive routine method to prove the presence of bacterial tryptophanase. The detection limit is 3 µg/L of indole. Grown bacteria on blood agar or medium, which contain tryptophan is necessary. Each kit of INDOLtest contains a vial of 10ml of solution, i.e. 140 determinations in total.

|   | INDOL Test  |
|---|---|
| + |  |
| - |  |

| Type | Cat. nr. | Product   | Nr. of exam. | Reagent req. | Susp. m. req. |
|------|----------|-----------|--------------|--------------|---------------|
| Kit  | 10010255 | INDOLtest | 140          | no           | no            |

## ENTEROtest I6

ENTEROtest 16 is designed for routine identification of important strains of family Enterobacteriaceae within 24 hours. The kit contains 16 biochemical tests, which are placed in 2 rows (double-strips) of a divided microplate. The identification can be supplemented with the tests available in the form of detection strips MIKROLATEST®: OXItest for detection of cytochromoxidase, ONPtest for detection of  $\beta$ -galactosidase, COLItest for detection of  $\beta$ -glucuronidase and VPtest for detection of acetoin formation. Each kit of ENTEROTEST 16 contains 10 microplates, i.e. 60 determinations in total.

| Type                               | Cat. nr. | Product                                    | Nr. of exam. | Reagent req. | Susp. m. req. |
|------------------------------------|----------|--|--------------|--------------|---------------|
| Kit                                | 10003376 | ENTEROtest 16                              | 60           | yes          | no            |
| Reagents - kit (not included)      | 10003372 | Reagent for INDOLE test                    | 630          | -            | -             |
|                                    | 10003370 | Reagent for PHENYLALANINE test             | 230          | -            | -             |
| Additional tests (optional)        | 10003324 | OXItest                                    | 50           | optional     |               |
|                                    | 10003323 | ONPtest                                    | 50           | no           |               |
|                                    | 10003326 | COLItest                                   | 50           | yes          |               |
|                                    | 10003329 | VPtest                                     | 50           | yes          |               |
| Reagents - add. t. (not included). | 10003375 | Reagent for OXIDASE test                   | 250          | -            | -             |
|                                    | 10003372 | Reagent for INDOLE test (used in COLItest) | 120          | -            | -             |
|                                    | 10003369 | Reagent for ACETOIN test                   | 90           | -            | -             |
| Other req. items (not included)    | 10003371 | Paraffin oil, sterilized                   | 150          | -            | -             |

| 1 |   | H                | G   | F   | E   | D   | C   | B   | A   |
|---|---|------------------|-----|-----|-----|-----|-----|-----|-----|
|   |   | H <sub>2</sub> S | LYS | IND | ORN | URE | PHE | ESL | SCI |
| + | + | ●                | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
|   | - | ●                | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
| 2 |   | H                | G   | F   | E   | D   | C   | B   | A   |
|   |   | MAL              | INO | ADO | CEL | SUC | SOR | TRE | MAN |
| + | + | ●                | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
|   | - | ●                | ●   | ●   | ●   | ●   | ●   | ●   | ●   |

|   | OXItest |
|---|---------|
| + | ●       |
| - | ○       |

|   | ONP Test |
|---|----------|
| + | ●        |
| - | ○        |

|   | VPtest |
|---|--------|
| + | ●      |
| - | ○      |

|   | OFtest |
|---|--------|
| + | ●      |
| - | ○      |

### Code book:

*Citrobacter amalonaticus*, *Citrobacter braakii*, *Citrobacter farmeri*, *Citrobacter freundii*, *Citrobacter koseri*, *Citrobacter sedlakii*, *Citrobacter werkmanii*, *Citrobacter youngae*, *Edwardsiella tarda*, *Enterobacter aerogenes*, *Enterobacter cloacae*, *Enterobacter sakazakii*, *Escherichia coli*, *Escherichia fergusonii*, *Escherichia hermannii*, *Escherichia vulneris*, *Hafnia alvei*, *Klebsiella oxytoca*, *Klebsiella ozaenae*, *Klebsiella pneumoniae*, *Klebsiella pneumoniae/rhinoscleromatis*, *Kluyvera ascorbata*, *Leclercia adecarboxylata*, *Morganella morganii/morganii*, *Morganella morganii/sibonii*, *Pantoea agglomerans*, *Proteus mirabilis*, *Proteus penneri*, *Proteus vulgaris*, *Providencia alcalifaciens*, *Providencia rettgeri*, *Providencia stuartii*, *Salmonella serovar choleraesuis*, *Salmonella serovar gallinarum*, *Salmonella serovar paratyphi A*, *Salmonella serovar pullorum*, *Salmonella subgroup1*, *Salmonella subgroup2*, *Salmonella subgroup3a(Arizona)*, *Salmonella subgroup3b(Arizona)*, *Salmonella subgroup4*, *Salmonella subgroup5*, *Salmonella serovar typhi*, *Serratia ficaria*, *Serratia marcescens*, *Serratia odorifera biogroup 1*, *Serratia odorifera biogroup 2*, *Serratia rubidaea*, *Shigella A,B,C*, *Shigella sonnei*, *Yersinia enterocolitica*, *Yersinia kristensenii*, *Yersinia pestis*, *Yersinia pseudotuberculosis*, *Yersinia rohdei*, *Yersinia regensburgensis*


## MIKROB software:

*Acinetobacter* sp., *Aeromonas hydrophila*, *Aeromonas* sp., *Bordetella holmesii*, *Bordetella parapertussis*, *Budvicia aquatica*, *Burkholderia cepacia* complex, *Cedecea davisae*, *Cedecea lapagei*, *Cedecea neteri*, *Cedecea* sp. 3, *Cedecea* sp. 5, *Citrobacter amalonicus*, *Citrobacter freundii*, *Citrobacter koseri*, *Citrobacter braakii*, *Citrobacter farmeri*, *Citrobacter sedlakii*, *Citrobacter werkmanii*, *Citrobacter gillenii*, *Citrobacter murlinae*, *Citrobacter youngae*, *Edwardsiella tarda*, *Edwardsiella tarda* biogroup 1, *Enterobacter aerogenes*, *Enterobacter amnigenus* group 1, *Enterobacter amnigenus* group 2, *Enterobacter asburiae*, *Enterobacter cancerogenus*, *Enterobacter cloacae*, *Enterobacter cowanii*, *Enterobacter dissolvens*, *Enterobacter gergoviae*, *Enterobacter hormaechei*, *Enterobacter kobei*, *Enterobacter nimipressuralis*, *Enterobacter pyrinus*, *Enterobacter sakazakii*, *Enterobacter intermedius*, *Enterobacter gergoviae*, *Escherichia coli*, *Escherichia coli* inactivae, *Escherichia fergusonii*, *Escherichia hermannii*, *Escherichia vulneris*, *Ewingella americana*, *Hafnia alvei*, *Raoultella ornithinolytica*, *Klebsiella oxytoca*, *Klebsiella pneumoniae/ozaenae*, *Raoultella planticola*, *Klebsiella pneumoniae/pneumoniae*, *Klebsiella pneumoniae/rhinoscleromatis*, *Kluyvera ascorbata*, *Kluyvera cryocrescens*, *Kluyvera georgiana*, *Leclercia adecarboxylata*, *Leminorella grimontii*, *Leminorella richardii*, *Moellerella wisconsensis*, *Morganella morganii* biogroup 1, *Morganella morganii/morganii*, *Morganella morganii/sibonii*, *Obesumbacterium proteus* gr.2, *Pantoea agglomerans*, *Photobacterium asymbiotica*, *Plesiomonas shigelloides*, *Proteus hauseri*, *Proteus mirabilis*, *Proteus penneri*, *Proteus vulgaris*, *Providencia alcalifaciens*, *Providencia rettgeri*, *Providencia rustigianii*, *Providencia stuartii*, *Providencia heimbachae*, *Pseudomonas luteola*, *Pseudomonas oryziabitis*, *Rahnella aquatilis*, *Salmonella* serovar *choleraesuis*, *Salmonella* serovar *gallinarum*, *Salmonella enterica* ssp. *enterica*, *Salmonella enterica* ssp. *salamae*, *Salmonella enterica* ssp. *Arizona*, *Salmonella enterica* ssp. *diarizonae*, *Salmonella enterica* ssp. *houtenae*, *Salmonella* serovar *paratyphi* A, *Salmonella* serovar *typhi*, *Salmonella enterica* ssp. *indica*, *Salmonella bongori*, *Serratia ficaria*, *Serratia fonticola*, *Serratia liquefaciens* group, *Serratia marcescens*, *Serratia marcescens* biovar 1, *Serratia odorifera* biogroup 1, *Serratia odorifera* biogroup 2, *Serratia plymuthica*, *Serratia rubidaea*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Stenotrophomonas maltophilia*, *Tatumella ptyseos*, *Trabulsiella guamensis*, *Vibrio cholerae*, *Yersinia aldovae*, *Yersinia bercovieri*, *Yersinia enterocolitica*, *Yersinia frederiksenii*, *Yersinia intermedia*, *Yersinia kristensenii*, *Yersinia pseudotuberculosis*, *Yokenella regensburgei*, *Yersinia mollahareii*, *Yersinia pestis*

## ENTERO-Screen

ENTERO-Screen is designed for rapid identification of the most frequent Enterobacteriaceae isolated from food and clinical material, particularly in urinary infections, eventually for further purposes, within 4 hours. The kit contains 8 biochemical tests which are placed in a short 8-well strip of a divided microplate. The identification can be supplemented with the tests available in the form of detection strips MIKROLATEST®. Each kit of ENTERO-Screen contains 3 microplates, i.e. 36 determinations in total.

| Type                            | Cat. nr. | Product                   | Nr. of exam. | Reagent req. | Susp. m. req. |
|---------------------------------|----------|---------------------------|--------------|--------------|---------------|
| Kit                             | 10003377 | ENTERO-Screen             | 36           | no           | no            |
| Reagents – kit (not included)   | 10003369 | Reagent for ACETOIN       | 270          | -            | -             |
|                                 | 10003370 | Reagent for PHENYLALANINE | 230          | -            | -             |
|                                 | 10003372 | Reagent for INDOLE        | 310          | -            | -             |
| Other req. items (not included) | 10003371 | Paraffin oil, sterilized  | 90           | -            | -             |

|   | H   | G   | F   | E   | D   | C   | B   | A   |
|---|---|---|---|---|---|---|---|---|
|   | GLU   | VPT   | PHE   | IND   | SUC   | URE   | LYS   | ORN   |
| + |  |  |  |  |  |  |  |  |
| - |  |  |  |  |  |  |  |  |
































## Code book / MIKROB software:































*Citrobacter amalonicus*, *Citrobacter freundii* complex, *Citrobacter koseri*, *Enterobacter aerogenes*, *Enterobacter cloacae*, *Escherichia coli*, *Klebsiella oxytoca*, *Klebsiella pneumoniae*, *Morganella morganii*, *Proteus mirabilis*, *Proteus vulgaris*, *Providencia rettgeri*, *Providencia stuartii*, *Salmonella* sp., *Serratia marcescens*





















## ENTERO-Rapid 24




The ENTERO-Rapid 24 kit is intended for rapid identification of important intestinal bacteria of the Enterobacteriaceae family in 4 hours. The kit contains 24 biochemical tests, which are placed in 3 (triple-strips) of a divided microplate. To differentiate between Enterobacteriaceae and Vibrionaceae family, a test for the detection of cytochromoxidase, the OXItest, can be used. Each kit of ENTERO-Rapid 24 contains 10 microplates, i.e. 40 determinations in total.



| Type                              | Cat. nr. | Product                      | Nr. of exam. | Reagent req. | Susp. m. req. |
|-----------------------------------|----------|------------------------------|--------------|--------------|---------------|
| Kit                               | 10003390 | ENTERO-Rapid 24              | 40           | yes          | no            |
| Reagents - kit (not included)     | 10003372 | Reagent for INDOLE test      | 310          | -            | -             |
|                                   | 10003379 | Reagent for PYR test         | 800          | -            | -             |
|                                   | 10003369 | Reagent for ACETOIN test     | 270          | -            | -             |
|                                   | 10003374 | Reagent for PHOSPHATASE test | 250          | -            | -             |
| Additional tests (optional)       | 10003324 | OXItest                      | 50           | optional     | -             |
| Reagents - add. t. (not included) | 10003375 | Reagent for OXIDASE test     | 250          | -            | -             |
| Other req. items (not included)   | 10003371 | Paraffin oil, sterilized     | 90           | -            | -             |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 |   | H<br>IND  | G<br>LYS  | F<br>ORN  | E<br>URE  | D<br>SUC  | C<br>SOR  | B<br>TRE  | A<br>GLU  |
|   | ⊕ |   |     |     |     |     |     |     |     |
|   | ⊖ |    |   |   |   |   |   |   |   |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 2 |   | H<br>PYR  | G<br>ESL  | F<br>CEL  | E<br>MLB  | D<br>SAL  | C<br>MNS  | B<br>MLT  | A<br>RAF  |
|   | ⊕ |  |   |   |   |   |   |   |   |
|   | ⊖ |  |   |   |   |   |   |   |   |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 3 |   | H<br>VPT  | G<br>PHE  | F<br>MAL  | E<br>ONP  | D<br>GLR  | C<br>αGA  | B<br>bXY  | A<br>NAG  |
|   | ⊕ |   |    |   |  |  |  |  |  |
|   | ⊖ |    |   |   |  |  |  |  |  |

|   |   |
|---|---|
|   | OXI Test  |
| ⊕ |   |
| ⊖ |    |

|   |  |
|---|--|
|   | OFtest   |
| ⊕ |  |
| ⊖ |  |

### Code book:

*Cedecea davisae*, *Cedecea lapagei*, *Citrobacter amalonaticus*, *Citrobacter braakii*, *Citrobacter farmeri*, *Citrobacter freundii*, *Citrobacter koseri*, *Citrobacter sedlakii*, *Citrobacter werkmanii*, *Citrobacter youngae*, *Cronobacter sakazakii*, *Edwardsiella tarda*, *Enterobacter aerogenes*, *Enterobacter amnigenus*, *Enterobacter cloacae*, *Enterobacter gergoviae*, *Escherichia coli*, *Escherichia fergusonii*, *Escherichia hermanii*, *Escherichia vulneris*, *Hafnia alvei*, *Klebsiella oxytoca*, *Klebsiella pneumoniae ssp. ozaenae*, *Klebsiella pneumoniae ssp. pneumoniae*, *Klebsiella pneumoniae ssp. rhinoscleromatis*, *Kluyvera ascorbata*, *Leclercia adecarboxylata*, *Moellerella wisconsensis*, *Morganella morganii ssp. morganii*, *Morganella morganii ssp. sibonii*, *Pantoea agglomerans*, *Proteus mirabilis*, *Proteus penneri*, *Proteus vulgaris*, *Providencia alcalifaciens*, *Providencia rettgeri*, *Providencia stuartii*, *Salmonella enterica ssp. arizonae*, *Salmonella enterica ssp. enterica serovar choleraesuis*, *Salmonella enterica ssp. enterica serovar paratyphi A*, *Serratia ficaria*, *Serratia liquefaciens*, *Serratia marcescens*, *Serratia odorifera biogroup 1*, *Serratia odorifera biogroup 2*, *Serratia plymuthica*, *Serratia rubidaea*, *Shigella A*, *B*, *C*, *Shigella sonnei*, *Yersinia enterocolitica*, *Yersinia kristensenii*, *Yersinia pseudotuberculosis*, *Yersinia rohdei*, *Yokenella regensburgi*

























































































### MIKROB software:

*Citrobacter amalonaticus*, *Citrobacter braakii*, *Citrobacter farmeri*, *Citrobacter freundii*, *Citrobacter koseri*, *Citrobacter sedlakii*, *Citrobacter werkmanii*, *Citrobacter youngae*, *Cronobacter sakazakii*, *Edwardsiella tarda*, *Enterobacter aerogenes*, *Enterobacter cloacae*, *Escherichia coli*, *Escherichia fergusonii*, *Escherichia hermanii*, *Escherichia vulneris*, *Hafnia alvei*, *Klebsiella oxytoca*, *Klebsiella pneumoniae ssp. ozaenae*, *Klebsiella pneumoniae ssp. pneumoniae*, *Klebsiella pneumoniae ssp. rhinoscleromatis*, *Kluyvera ascorbata*, *Leclercia adecarboxylata*, *Morganella morganii ssp. morganii*, *Morganella morganii ssp. sibonii*, *Pantoea agglomerans*, *Proteus mirabilis*, *Proteus penneri*, *Proteus vulgaris*, *Providencia alcalifaciens*, *Providencia rettgeri*, *Providencia stuartii*, *Salmonella enterica ssp. arizonae*, *Salmonella enterica ssp. enterica serovar choleraesuis*, *Salmonella enterica ssp. enterica serovar paratyphi A*, *Serratia ficaria*, *Serratia marcescens*, *Serratia odorifera biogroup 1*, *Serratia odorifera biogroup 2*, *Serratia rubidaea*, *Shigella A*, *B*, *C*, *Shigella sonnei*, *Yersinia enterocolitica*, *Yersinia kristensenii*, *Yersinia pseudotuberculosis*, *Yersinia rohdei*, *Yokenella regensburgi*

# NEFERMtest 24

NEFERMtest 24 is a nonreagent test designed for routine identification of Gram-negative nonfermentative bacteria isolated particularly from clinical material within 24 hours. The kit also enables to perform the identification of the most frequent oxidase-positive fermenting gram-negative rods. The kit contains 24 biochemical tests, which are placed in 3 rows (triple-strips) of a divided microplate. The identification has to be supplemented with a test for detection of cytochromoxidase, available in the form of the detection strip MIKROLATEST® OXItest. Each kit of NEFERMtest 24 contains 10 microplates, i.e. 40 determinations in total.

| Type                              | Cat. nr. | Product                  | Nr. of exam. | Reagent req. | Susp. m. req. |
|-----------------------------------|----------|--------------------------|--------------|--------------|---------------|
| Kit                               | 10003388 | NEFERMtest 24            | 40           | no           | no            |
| Additional tests (optional)       | 10003324 | OXItest                  | 50           | no           | -             |
| Reagents - add. t. (not included) | 10003375 | Reagent for OXIDASE test | 250          | -            | -             |
| Other req. items (not included)   | 10003371 | Paraffin oil, sterilized | 150          | -            | -             |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | URE   | ARG   | ORN   | LYS   | AAM   | bGL   | NAG   | SCI   |
|   | ⊕ |    |    |    |    |    |    |    |    |
| 2 |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | LAC   | MAN   | TRE   | XYL   | ARA   | αGA   | bGA   | MAL   |
|   | ⊕ |  |  |  |  |  |  |  |  |
| 3 |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | GAL   | MLT   | CEL   | SUC   | INO   | gGT   | PHS   | ESL   |
|   | ⊕ |  |  |  |  |  |  |  |  |
|   |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | LAC   | MAN   | TRE   | XYL   | ARA   | αGA   | bGA   | MAL   |
|   | ⊖ |  |  |  |  |  |  |  |  |
|   |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | GAL   | MLT   | CEL   | SUC   | INO   | gGT   | PHS   | ESL   |
|   | ⊖ |  |  |  |  |  |  |  |  |
|   |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | LAC   | MAN   | TRE   | XYL   | ARA   | αGA   | bGA   | MAL   |
|   | ⊖ |  |  |  |  |  |  |  |  |
|   |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | GAL   | MLT   | CEL   | SUC   | INO   | gGT   | PHS   | ESL   |
|   | ⊖ |  |  |  |  |  |  |  |  |
|   |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | LAC   | MAN   | TRE   | XYL   | ARA   | αGA   | bGA   | MAL   |
|   | ⊖ |  |  |  |  |  |  |  |  |
|   |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | GAL   | MLT   | CEL   | SUC   | INO   | gGT   | PHS   | ESL   |
|   | ⊖ |  |  |  |  |  |  |  |  |
|   |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | LAC   | MAN   | TRE   | XYL   | ARA   | αGA   | bGA   | MAL   |
|   | ⊖ |  |  |  |  |  |  |  |  |
|   |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | GAL   | MLT   | CEL   | SUC   | INO   | gGT   | PHS   | ESL   |
|   | ⊖ |  |  |  |  |  |  |  |  |

## Code book / MIKROB software:

*Achromobacter piechaudii*, *Achromobacter xylosoxidans/denitrificans*, *Achromobacter xylosoxidans/xylosoxidans*, *Acinetobacter baumannii*, *Acinetobacter calcoaceticus*, *Acinetobacter haemolyticus*, *Acinetobacter johnsonii*, *Acinetobacter junii*, *Acinetobacter lwoffii*, *Alcaligenes faecalis*, *Bergeyella zoohelcum*, *Bordetella bronchiseptica*, *Bordetella hinzii*, *Bordetella holmesii*, *Bordetella parapertussis*, *Brevundimonas diminuta*, *Brevundimonas vesicularis*, *Burkholderia cepacia* komplex, *Burkholderia mallei*, *Burkholderia pseudomallei*, *Chryseobacterium gleum*, *Chryseobacterium indologenes*, *Chryseobacterium meningosepticum*, *Comamonas terrigena*, *Comamonas testosteroni*, *Delftia acidovorans*, *Eikenella corrodens*, *Empedobacter brevis*, *Flavobacterium mizutaii*, *Kingella denitrificans*, *Kingella kingae*, *Moraxella atlantae*, *Moraxella lacunata*, *Moraxella nonliquefaciens*, *Moraxella osloensis*, *Myroides odoratimimus*, *Myroides odoratus*, *Ochrobactrum anthropi*, *Oligella ureolytica*, *Oligella urethralis*, *Pseudomonas aeruginosa*, *Pseudomonas alcaligenes*, *Pseudomonas fluorescens*, *Pseudomonas fragi*, *Pseudomonas luteola*, *Pseudomonas mendocina*, *Pseudomonas oryzihabitans*, *Pseudomonas pseudoalcaligenes*, *Pseudomonas putida*, *Pseudomonas stutzeri*, *Psychrobacter phenylpyruvicus*, *Ralstonia mannitolilytica*, *Ralstonia pickettii* biovar 1, *Ralstonia pickettii* biovar 2, *Rhizobium radiobacter*, *Shewanella algae*, *Shewanella putrefaciens*, *Sphingobacterium multivorum*, *Sphingobacterium spiritivorum*, *Sphingobacterium thalpophilum*, *Sphingomonas paucimobilis*, *Stenotrophomonas maltophilia*, *Suttonella indologenes*, *Weeksella virosa*



































**Aeromonadaceae:** *Aeromonas caviae*, *Aeromonas enteropelogenes*, *Aeromonas hydrophila* subs. hydr., *Aeromonas ichthiosmia*, *Aeromonas jandaei*, *Aeromonas schubertii*, *Aeromonas sobria*, *Aeromonas veronii*, *Aeromonas trota*

**Vibrionaceae:** *Vibrio alginolyticus*, *Vibrio cholerae*, *Vibrio fluvialis*, *Vibrio furnissii*, *Vibrio hollisae*, *Vibrio metchnikovii*, *Vibrio mimicus*, *Vibrio parahaemolyticus*, *Vibrio vulnificus*, *Plesiomonas shigelloides*

## STAPHYtest 24

The identification kit without reagents STAPHYtest 24, is designed for the definitive identification of staphylococci isolated from clinical material and for their differentiation from other Gram-positive catalase-positive cocci. The kit contains 24 biochemical tests, which are placed in 3 rows (triple-strips) of a divided microplate. The identification can be supplemented with the tests available in the form of detection strips MIKROLATEST®: VPtest for the detection of acetoin formation, PYRAtest for the detection of pyrrolidonylarylamidase activity and OXItest for the detection of cytochromoxidase. Each kit of STAPHYtest 24 contains 10 microplates, i.e. 40 determinations in total.

| Type                              | Cat. nr. | Product                  | Nr. of exam. | Reagent req. | Susp. m. req. |
|-----------------------------------|----------|--------------------------|--------------|--------------|---------------|
| Kit                               | 10010223 | STAPHYtest 24            | 40           | no           | no            |
| Additional tests (optional)       | 10003329 | VPtest                   | 50           | yes          | -             |
|                                   | 10003324 | OXItest                  | 50           | optional     | -             |
|                                   | 10003344 | PYRAtest                 | 50           | yes          | -             |
|                                   | 50001697 | NOVOBIOCIN disc          | 100          | no           | -             |
|                                   | 50001518 | BACITRACIN S disc        | 100          | no           | -             |
| Reagents - add. t. (not included) | 10003369 | Reagent for ACETOIN test | 90           | -            | -             |
|                                   | 10003375 | Reagent for OXIDASE test | 250          |              |               |
|                                   | 10003379 | Reagent for PYR test     | 800          |              |               |
| Other req. items (not included)   | 10003371 | Paraffin oil, sterilized | 250          | -            | -             |

|           |   |   |   |   |   |   |   |   |   |
|-----------|---|---|---|---|---|---|---|---|---|
| 1         |   | H   | G   | F   | E   | D   | C   | B   | A   |
|           |   | URE   | ARG   | ORN   | bGA   | GLR   | bGL   | PHS   | ESL   |
|           | + |    |    |  |  |  |  |  |  |
| 2         |   | H   | G   | F   | E   | D   | C   | B   | A   |
|           |   | NAG   | GAL   | SUC   | TRE   | MAN   | MLT   | XYL   | MNS   |
|           | + |    |    |  |  |  |  |  |  |
| 3         |   | H   | G   | F   | E   | D   | C   | B   | A   |
|           |   | LAC   | SOR   | RIB   | FRU   | CEL   | ARA   | RAF   | XOL   |
|           | + |    |    |  |  |  |  |  |  |
| VPTest    |   |   |   |   |   |   |   |   |   |
|           | + |    |    |   |   |   |   |   |   |
|           | - |    |    |   |   |   |   |   |   |
| OXI Test  |   |   |   |   |   |   |   |   |   |
|           | + |    |  |   |   |   |   |   |   |
|           | - |  |   |   |   |   |   |   |   |
| PYRA Test |   |   |   |   |   |   |   |   |   |
|           | + |    |    |   |   |   |   |   |   |
|           | - |    |   |   |   |   |   |   |   |

### Code book

*Aerococcus viridans*, *Dermacoccus nishinomiyaensis*, *Kocuria kristinae*, *Kocuria rosea*, *Kocuria varians*, *Macrococcus bovicus*, *Macrococcus caseolyticus*, *Macrococcus carouzelicus*, *Macrococcus equipersicus*, *Micrococcus spp.*, *Rothia mucilaginosa*, *Staphylococcus arlettae*, *Staphylococcus aureus ssp anaerobius*, *Staphylococcus aureus ssp aureus*, *Staphylococcus auricularis*, *Staphylococcus capitis ssp. ureolyticus*, *Staphylococcus capitis ssp capitis*, *Staphylococcus caprae*, *Staphylococcus carnosus ssp. carnosus*, *Staphylococcus carnosus ssp. utilis*, *Staphylococcus cohnii ssp. urealyticum*, *Staphylococcus cohnii ssp. cohnii*, *Staphylococcus condimenti*, *Staphylococcus delphini*, *Staphylococcus epidermidis*, *Staphylococcus equorum*, *Staphylococcus felis*, *Staphylococcus gallinarum*, *Staphylococcus haemolyticus*, *Staphylococcus hominis ssp. novobiosepticus*, *Staphylococcus hominis ssp hominis*, *Staphylococcus hyicus*, *Staphylococcus chromogenes*, *Staphylococcus intermedius*, *Staphylococcus*



(cont.)

*kloosii*, *Staphylococcus lentus*, *Staphylococcus lugdunensis*, *Staphylococcus lutrae*, *Staphylococcus muscae*, *Staphylococcus pasteurii*, *Staphylococcus piscifermentans*, *Staphylococcus saprophyticus* ssp. *saprophyticus*, *Staphylococcus saprophyticus* ssp. *bovis*, *Staphylococcus sciuri*, *Staphylococcus schleiferi* ssp. *coagulans*, *Staphylococcus schleiferi* ssp. *schleiferi*, *Staphylococcus simulans*, *Staphylococcus vitulinus*, *Staphylococcus warneri*, *Staphylococcus xylosus*

































**MIKROB software**



*Aerococcus viridans*, *Darmococcus nishinomiyaensis*, *Kocuria kristinae*, *Kocuria rosea*, *Kocuria variant*, *Kytococcus sedentarius*, *Macrococcus bovicus*, *Macrococcus caroussellicus*, *Macrococcus equipersicus*, *Rothia mucilaginosa*, *Micrococcus luteus*, *Micrococcus lylae*, *Staphylococcus capitis* ssp. *ureolyticus*, *Staphylococcus cohnii* ssp. *urealyticum*, *Staphylococcus arlettae*, *Staphylococcus aureus* ssp. *anaerobius*, *Staphylococcus aureus* ssp. *aureus*, *Staphylococcus auricularis*, *Staphylococcus capitis* ssp. *capitis*, *Staphylococcus caprae*, *Staphylococcus carnosus* ssp. *carnosus*, *Staphylococcus carnosus* ssp. *utilit*, *Staphylococcus condimenti*, *Staphylococcus chromogenes*, *Staphylococcus cohnii* ssp. *cohnii*, *Staphylococcus delphini*, *Staphylococcus epidermidis* PHS-, *Staphylococcus epidermidis*, *Staphylococcus equorum*, *Staphylococcus felis*, *Staphylococcus gallinarum*, *Staphylococcus haemolyticus*, *Staphylococcus hominis* ssp. *hominis*, *Staphylococcus hominis* ssp. *novobiosepticus*, *Staphylococcus hyicus*, *Staphylococcus intermedius*, *Staphylococcus kloosii*, *Staphylococcus lentus*, *Staphylococcus lugdunensis*, *Staphylococcus lutrae*, *Staphylococcus muscae*, *Staphylococcus pasteurii*, *Staphylococcus piscifermentans*, *Staphylococcus saprophyticus* ssp. *bovis*, *Staphylococcus saprophyticus* ssp. *saprophyticus*, *Staphylococcus schleiferi* ssp. *coagulans*, *Staphylococcus schleiferi* ssp. *schleiferi*, *Staphylococcus sciuri* ssp. *carnaticus*, *Staphylococcus sciuri* ssp. *rodentium*, *Staphylococcus sciuri* ssp. *sciuri*, *Staphylococcus simulans*, *Staphylococcus vitulinus*, *Staphylococcus warneri*, *Staphylococcus xylosus* *Salmonella enterica* ssp. *Arizona*, *Serratia ficaria*, *Serratia marcescens*, *Serratia odorifera* biogroup 1, *Serratia odorifera* biogroup 2, *Serratia rubidaea*, *Shigella sonnei*, *Shigella A,B,C*, *Yersinia enterocolitica*, *Yersinia kristensenii*, *Yersinia pseudotuberculosis*, *Yersinia rohdei*, *Yokenella regensburgei*



## STAPHYtest 16



STAPHYtest is designed for routine identification of staphylococci, particularly for the coagulase-negative strains, isolated from clinical material and food within 16-24 hours. The kit contains 16 biochemical tests, which are placed in 2 rows (double-strips) of a divided microplate. The identification can be supplemented with the tests available in the form of detection strips MIKROLATEST® VPtest, OXItest, PYRAtest and Novobiocin disc. Each kit of STAPHYtest 16 contains 10 microplates, i.e. 40 determinations in total.

| Type                              | Cat. nr. | Product                      | Nr. of exam. | Reagent req. | Susp. m. req. |
|-----------------------------------|----------|------------------------------|--------------|--------------|---------------|
| Kit                               | 10003378 | STAPHYtest 16                | 40           | yes          | no            |
| Reagents - kit (not included)     | 10003374 | Reagent for PHOSPHATASE test | 250          | -            | -             |
|                                   | 10003373 | Reagent for NITRATE test     | 460          | -            | -             |
| Additional tests (optional)       | 10003329 | VPtest                       | 50           | yes          | -             |
|                                   | 10003324 | OXItest                      | 50           | optional     | -             |
|                                   | 10003344 | PYRAtest                     | 50           | yes          | -             |
|                                   | 50001697 | NOVOBIOCIN disc              | 100          | no           | -             |
| Reagents - add. t. (not included) | 10003369 | Reagent for ACETOIN test     | 90           | -            | -             |
|                                   | 10003375 | Reagent for OXIDASE test     | 250          | -            | -             |
|                                   | 10003379 | Reagent for PYR test         | 800          | -            | -             |
| Other req. items (not included)   | 10003371 | Paraffin oil, sterilized     | 250          | -            | -             |

| 1 |   | H   | G   | F   | E   | D   | C   | B   | A   |
|---|---|---|---|---|---|---|---|---|---|
|   |   | URE   | ARG   | ORN   | bGA   | GLR   | ESL   | NIT   | PHS   |
| 1 | ⊕ |  |  |  |  |  |  |  |  |
|   | ⊖ |  |  |  |  |  |  |  |  |
| 2 |   | H   | G   | F   | E   | D   | C   | B   | A   |
|   |   | GAL   | SUC   | TRE   | MAN   | XYL   | MLT   | MNS   | LAC   |
| 2 | ⊕ |  |  |  |  |  |  |  |  |
|   | ⊖ |  |  |  |  |  |  |  |  |

|   | VPtest  |
|---|---|
| ⊕ |  |
| ⊖ |  |

|   | OXI Test  |
|---|---|
| ⊕ |    |
| ⊖ |  |

|   | PYRA Test   |
|---|---|
| ⊕ |  |
| ⊖ |  |

### Code book:

*Kocuria kristinae*, *Staphylococcus aureus* ssp. *aureus*, *Staphylococcus auricularis*, *Staphylococcus capitis* ssp. *urealyticus*, *Staphylococcus capitis* ssp. *capitis*, *Staphylococcus cohnii* ssp. *urealyticum*, *Staphylococcus cohnii* ssp. *cohnii*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Staphylococcus hominis* ssp. *novobioceticus*, *Staphylococcus hominis* ssp. *hominis*, *Staphylococcus hyicus*, *Staphylococcus intermedius*, *Staphylococcus lugdunensis*, *Staphylococcus saprophyticus* ssp. *saprophyticus*, *Staphylococcus sciuri* ssp. *lentus*, *Staphylococcus schleiferi* ssp. *schleiferi*, *Staphylococcus simulans*, *Staphylococcus xylosum*, *Staphylococcus warneri*, *Staphylococcus pasteurii*

















### MIKROB software:

















*Aerococcus viridans*, *Dermaococcus nishinomiyaensis*, *Kocuria kristinae*, *Kocuria rosea*, *Kocuria varians*, *Macroccoccus bovicus*, *Macroccoccus caroulesicus*, *Macroccoccus caseolyticus*, *Macroccoccus equipersicus*, *Microccoccus* sp., *Rothia mucilaginosa*, *Staphylococcus arlettae*, *Staphylococcus aure* ssp. *anaerobius*, *Staphylococcus aureus* ssp. *aureus*, *Staphylococcus auricularis*, *Staphylococcus capitis* ssp. *capitis*, *Staphylococcus cap* ssp. *ureolyticus*, *Staphylococcus caprae*, *Staphylococcus carnos* ssp. *carnosus*, *Staphylococcus carnosus* ssp. *utilis*, *Staphylococcus cohnii* ssp. *urealyticum*, *Staphylococcus cohnii* ssp. *cohnii*, *Staphylococcus condimenti*, *Staphylococcus delphini*, *Staphylococcus epidermidis*, *Staphylococcus equorum*, *Staphylococcus felis*, *Staphylococcus gallinarum*, *Staphylococcus haemolyticus*, *Staphylococcus hominis* ssp. *hominis*, *Staphylococcus hominis* ssp. *novobioceticus*, *Staphylococcus hyicus*, *Staphylococcus intermedius*, *Staphylococcus intermedius*, *Staphylococcus kloosii*, *Staphylococcus lentus*, *Staphylococcus lugdunensis*, *Staphylococcus lutrae*, *Staphylococcus muscae*, *Staphylococcus pasteurii*, *Staphylococcus piscifermentans*, *Staphylococcus saprophyticus* ssp. *bovis*, *Staphylococcus saprophyticus* ssp. *saprophyticus*, *Staphylococcus schleiferi* ssp. *coagulans*, *Staphylococcus schleiferi* ssp. *schleiferi*, *Staphylococcus sciuri*, *Staphylococcus simulans*, *Staphylococcus vitulinus*, *Staphylococcus warneri*, *Staphylococcus xylosum*

















# STREPTOtest 24





STREPTOtest 24 is designed for definitive identification on species level of genus *Streptococcus*, *Enterococcus* and related Gram-positive, catalase negative cocci isolated from clinical material. Kit contains 40 strips, each strip with 24 biochemical tests placed in the microwells. Standard off-line tests for screening of pyrrolidonylarylamidase activity (PYRAtest) and hippurate hydrolysis (HIPPURATEtest) are available separately. When recommended by evaluating software the identification can be specified with VPtest, catalase or haemolytic activity. Each kit of STREPTOtest 24 contains 10 microplates, i.e. 40 determinations in total.




| Type                              | Cat. nr. | Product                              | Nr. of exam. | Reagent req. | Susp. m. req. |
|-----------------------------------|----------|--------------------------------------|--------------|--------------|---------------|
| Kit                               | 10010245 | STREPTOtest 24                       | 40           | no           | yes           |
| Additional tests (optional)       | 10003321 | HIPPURATEtest                        | 50           | yes          | -             |
|                                   | 10003344 | PYRAtest                             | 50           | yes          | -             |
|                                   | 10003329 | VPtest                               | 50           | yes          | -             |
| Reagents - add. t. (not included) | 10003368 | Reagent for HIPPURATE test           | 200          | -            | -             |
|                                   | 10003379 | Reagent for PYR test                 | 800          | -            | -             |
|                                   | 10003369 | Reagent for ACETOIN test             | 90           | -            | -             |
| Other req. items (not included)   | 10010246 | Suspension medium for STREPTOtest 24 | 20           | -            | -             |
|                                   | 10003371 | Paraffin oil, sterilized             | 370          |              |               |




|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 |   | H<br>NAG  | G<br>LAP  | F<br>bMN  | E<br>GLR  | D<br>bGL  | C<br>bGA  | B<br>αGA  | A<br>PHS  |
|   | ⊕ |  |  |  |  |  |  |  |  |
|   | ⊖ |  |  |  |  |  |  |  |  |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 2 |   | H<br>ESL  | G<br>INU  | F<br>MAN  | E<br>SOR  | D<br>MLB  | C<br>RIB  | B<br>LAC  | A<br>PUL  |
|   | ⊕ |  |  |  |  |  |  |  |  |
|   | ⊖ |  |  |  |  |  |  |  |  |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 3 |   | H<br>ARG  | G<br>SO6  | F<br>AMG  | E<br>TGT  | D<br>MLT  | C<br>RAF  | B<br>TRE  | A<br>SOE  |
|   | ⊕ |  |  |  |  |  |  |  |  |
|   | ⊖ |  |  |  |  |  |  |  |  |

|   |   |
|---|---|
|   | VPTest  |
| ⊕ |   |
| ⊖ |   |

|   |  |
|---|--|
|   | PYRA Test  |
| ⊕ |   |
| ⊖ |    |

|   |   |
|---|---|
|   | HIPPURATEtest   |
| ⊕ |   |
| ⊖ |    |

## Code book / MIKROB software:

*Abiotrophia defective*, *Aerococcus christensenii*, *Aerococcus sanguinicola*, *Aerococcus urinae*, *Aerococcus urinaehominis*, *Aerococcus viridans*, *Alloiococcus otitis*, *Dolosicoccus paucivorans*, *Enterococcus asini*, *Enterococcus avium*, *Enterococcus casseliflavus*, *Enterococcus cecorum*, *Enterococcus columbae*, *Enterococcus dispar*, *Enterococcus durans*, *Enterococcus faecalis*, *Enterococcus faecium*, *Enterococcus gallinarum*, *Enterococcus gilvus*, *Enterococcus hirae*, *Enterococcus malodoratus*, *Enterococcus mundtii*, *Enterococcus pallens*, *Enterococcus pseudoavium*, *Enterococcus raffinosus*, *Enterococcus saccharolyticus*, *Facklamia sourekii*, *Gemella bergeriae*, *Gemella haemolysans*, *Gemella sanguinis*, *Globicatella sanguinis*, *Granulicatella adiacens*, *Helcococcus kunzii*, *Lactococcus garvieae*, *Lactococcus lactis* spp. *cremonis*, *Lactococcus lactis* spp. *lactis*, *Leuconostoc* sp., *Streptococcus acidominimus*, *Streptococcus agalactiae*, *Streptococcus alactolyticus*, *Streptococcus anginosus*, *Streptococcus canis*, *Streptococcus constellatus* ssp. *constellatus*, *Streptococcus constellatus* ssp. *pharyngis*, *Streptococcus cristatus*, *Streptococcus dysgalactiae* ssp. *dysgalactiae*, *Streptococcus dysgalactiae* ssp. *equisimilis*, *Streptococcus equi* ssp. *equi*,
















## (cont.)




*Streptococcus equi ssp. zooepidemicus, Streptococcus gallolyticus ssp. gallolyticus, Streptococcus gallolyticus ssp. macedonicus, Streptococcus gallolyticus ssp. pasteurianus, Streptococcus gordonii, Streptococcus infantarius ssp. coli, Streptococcus infantarius ssp. infantarius, Streptococcus infantis, Streptococcus iniae, Streptococcus intermedius, Streptococcus mitis 1, Streptococcus mitis 2, Streptococcus mutans, Streptococcus oralis, Streptococcus parasanguis, Streptococcus parauberis, Streptococcus peroris, Streptococcus phocae, Streptococcus pneumoniae, Streptococcus porcinus, Streptococcus pyogenes, Streptococcus salivarius, Streptococcus sanguis biogroup 1, Streptococcus sanguis biogroup 2, Streptococcus sanguis biogroup 3, Streptococcus sanguis biogroup 4, Streptococcus sinensis, Streptococcus sobrinus, Streptococcus suis, Streptococcus uberis, Streptococcus urinalis, Streptococcus vestibularis, Vagococcus fluvialis*

## EN-COCCUStest

EN-COCCUStest is designed for routine species identification of clinically important strains of the genus *Enterococcus* within 24 hours. The kit contains 8 biochemical tests which are placed in a short 8-well strip of a divided microplate. PYRAtest, available in the form of detection strip, can be used as a screening test to class a suspect culture in the genus *Enterococcus*. Each kit of EN-COCCUStest contains 3 microplates, i.e. 36 determinations in total.

| Type                               | Cat. nr. | Product                  | Nr. of exam. | Reagent req. | Susp. m. req. |
|------------------------------------|----------|--------------------------|--------------|--------------|---------------|
| Kit                                | 10003383 | EN-COCCUStest            | 36           | no           | no            |
| Additional tests (optional)        | 10003344 | PYRAtest                 | 50           | yes          | -             |
| Reagents - add. t. (not included). | 10003379 | Reagent for PYR test     | 800          | -            | -             |
| Other req. items (not included)    | 10003371 | Paraffin oil, sterilized | 540          | -            | -             |

|   |   | H   | G   | F   | E   | D   | C   | B   | A   |   |
|---|---|---|---|---|---|---|---|---|---|---|
|   |   | ARG   | SOE   | ARA   | MAN   | SOR   | MLB   | RAF   | MLZ   |   |
|   | ⊕   |  |  |  |  |  |  |  |  |  |
| ⊖ |  |  |  |  |  |  |  |  |  |  |

|   | PYRA Test   |
|---|---|
| + |   |
| - |    |



























## Code book / MIKROB software:




*Enterococcus avium, Enterococcus casseliflavus, Enterococcus cecorum, Enterococcus columbae, Enterococcus dispar, Enterococcus durans, Enterococcus faecalis, Enterococcus faecium, Enterococcus flavescens, Enterococcus gallinarum, Enterococcus hirae, Enterococcus malodoratus, Enterococcus mundtii, Enterococcus pseudoavium, Enterococcus raffinosus, Enterococcus saccharolyticus*




## NEISSERIAtest

NEISSERIAtest identification kit is designed for identification of clinically important *Neisseriae*, particularly, *N. gonorrhoeae* and *N. meningitidis*, and *Moraxella (Branhamella) catarrhalis* in 24 hours. The kit is placed in a short 8-well strip of a divided microplate. The first evaluation of results is carried out after 4 hours of incubation; the final results are read after 24 hours. Each kit of NEISSERIAtest contains 3 microplates, i.e. 36 determinations in total.

| Type                              | Cat. nr. | Product                             | Nr. of exam. | Reagent req. | Susp. m. req. |
|-----------------------------------|----------|-------------------------------------|--------------|--------------|---------------|
| Kit                               | 10003382 | NEISSERIAtest                       | 36           | no           | yes           |
| Additional tests (optional)       | 10003323 | ONPtest                             | 50           | no           | -             |
|                                   | 10003324 | OXItest                             | 50           | optional     | -             |
|                                   | 50001523 | V+K DISC                            | 100          | -            | -             |
| Reagents - add. t. (not included) | 10003375 | Reagent for OXIDASE test            | 250          | -            | -             |
| Other req. items (not included)   | 10003381 | Suspension medium for NEISSERIAtest | 18           | -            | -             |

|   | H   | G   | F   | E   | D   | C   | B   | A   |
|---|-----|---|---|---|---|---|---|---|
|   | NEG | GLU   | MLT   | FRU   | SUC   | GGT   | TRB   | SPS   |
| + |     |   |   |   |   |   |   |   |
| - |     |   |   |   |   |    |   |    |

|   | OXI Test  |
|---|---|
| + |   |
| - |    |

|   | ONP Test   |
|---|--|
| + |   |
| - |    |



### Code book:

*Neisseria cinerea/elongata*, *Neisseria flavescens*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Neisseria lactamica*, *Neisseria polysacchara*, *Neisseria sicca/mucosa*, *Neisseria subflava*, *Moraxella (B.) catarrhalis*

## URE-HPtest

The URE-HPtest kit is designed for rapid detection of *Helicobacter pylori* in biptic samples within 4 hours depending on urease activity. *H. pylori* detection is based on the enzymatic hydrolysis of urea - the strong urease activity is dicriminative for *H. pylori*. To establish a positive diagnosis a confirmation by a positive culture of microscopic examination is needed. Each kit of URE-HPtest contains 3 microplates, i.e. 288 determinations in total.

















































| Type                        | Cat. nr. | Product                  | Nr. of exam. | Reagent req. | Susp. m. req. |
|-----------------------------|----------|--------------------------|--------------|--------------|---------------|
| Kit                         | 10003380 | URE-HPtest               | 288          | no           | no            |
| Additional tests (optional) | 10003371 | Paraffin oil, sterilized | 750          | -            | -             |

|   | URE-HPtest  |
|---|---|
| + |  |
| - |  |

## ANAEROTest 23

ANAEROTest 23 is designed for routine identification of anaerobic bacteria, most frequently occurring in clinical material and food. The kit contains 23 biochemical tests, which are placed in 3 rows (triple-strips) of a divided microplate. By means of this kit and additional microscopic examination, it is possible to identify more than 90 taxons of anaerobic bacteria. Each kit of ANAEROTest 23 contains 10 microplates, i.e. 40 determinations in total.

| Type                               | Cat. nr. | Product                             | Nr. of exam. | Reagent req. | Susp. m. req. |
|------------------------------------|----------|-------------------------------------|--------------|--------------|---------------|
| Kit                                | 10003366 | ANAEROTest 23                       | 40           | no           | yes           |
| Reagents - kit<br>(not included)   | 10003372 | Reagent for INDOLE test             | 310          | -            | -             |
|                                    | 10003373 | Reagent for NITRATE test            | 460          | -            | -             |
| Other req. items<br>(not included) | 10003367 | Suspension medium for ANAEROTest 23 | 20           | -            | -             |
|                                    | 10003371 | Paraffin oil, sterilized            | 750          | -            | -             |

| 1 |   | H<br>IND  | G<br>GLU  | F<br>MLT  | E<br>FRU  | D<br>GAL  | C<br>LAC  | B<br>MLZ   | A<br>URE  |
|---|---|---|---|---|---|---|---|--|---|
|   | + |    |    |    |    |    |    |    |    |
|   | - |    |    |    |    |    |    |    |    |
| 2 |   | H<br>NIT  | G<br>SUC  | F<br>SAL  | E<br>TRE  | D<br>MAN  | C<br>RHA  | B<br>NAG   | A<br>bGL  |
|   | + |   |   |   |   |   |   |   |   |
|   | - |  |  |  |  |  |  |  |  |
| 3 |   | H<br>ESL  | G<br>MNS  | F<br>RAF  | E<br>CEL  | D<br>XYL  | C<br>ARA  | B<br>SOR   | A<br>CON  |
|   | + |  |  |  |  |  |  |  |  |
|   | - |  |  |  |  |  |  |  |  |

### Code book:

*Acidaminococcus alkalescens, Actinomyces israelii, Actinomyces naeslundii, Actinomyces odontolyticus, Anaerococcus prevotii, Anaerorhabdus furcosus, Bacteroides distasonis, Bacteroides eggerthii, Bacteroides fragilis, Bacteroides ovalis, Bacteroides putredinis, Bacteroides thetaiotaomicron, Bacteroides uniformis, Bacteroides ureolyticus, Bacteroides vulgatus, Bifidobacterium breve, Bifidobacterium dentium, Bifidobacterium longum, Capnocytophaga ochracea, Cl. argentinense, Cl. histolyticum, Cl. baratii, Cl. bifermentans, Cl. botulinum A or E, Cl. botulinum B, Cl. botulinum C, Cl. butyricum, Cl. cadaveris, Cl. carnis, Cl. cochlearium, Cl. difficile, Cl. glycolicum, Cl. haemolyticum, Cl. chauvoei, Cl. indolis, Cl. innocuum, Cl. limosum, Cl. malenominatum, Cl. novy – A, Cl. novy – B, Cl. paraputrificum, Cl. perfringens, Cl. ramosum, Cl. scatologenes, Cl. septicum, Cl. sordellii, Cl. sphenoides, Cl. sporogenes, Cl. subterminale, Cl. tertium, Cl. tetani, Dialister pneumosintes, Dichelobacter nodosus, Eubacterium aerofaciens, Eubacterium alactolyticum, Eubacterium contortum, Eubacterium lentum, Eubacterium limosum, Eubacterium saburreum, Eubacterium tenue, Eubacterium tortuosum, Feingoldia magna, Fusobacterium gonidiaformans, Fusobacterium mortiferum, Fusobacterium necrogenes, Fusobacterium necrophorum, Fusobacterium nucleatum, Fusobacterium varium, Gemella morbillorum, Lactobacillus catenaforme, Leptotrichia buccalis, Megaspheera elsdenii, Micromonas micros, Mitsukella multiacidus, Peptococcus niger, Peptococcus sacharolyticus, Peptostreptococcus anareobius, Peptoniphilus asaccharolyticus, Peptostreptococcus parvulus, Porphyromonas asaccharolytica, Prevotella bivia, Prevotella buccalis, Prevotella intermedia, Prevotella melaninogenica, Prevotella oralis, Propionibacterium acnes, Propionibacterium avidum, Propionibacterium freudenreichii, Propionibacterium granulosum, Propionibacterium propionicum, Ruminococcus productus, Sacina ventriculi, Streptococcus hansenii, Streptococcus parvulus, Tissierella praeacuta, Veillonella parvula*

### MIKROB software:














































*Alistypes putredinis, Anaerorhabdus furcosus, Bacteroides caccae, Bacteroides distasonis, Bacteroides stercoris, Bacteroides eggerthii, Bacteroides fragilis, Bacteroides merdae, Bacteroides ovatus, Bacteroides splanchnicus, Bacteroides thetaiotaomicron, Bacteroides uniformis, Bacteroides ureolyticus, Bacteroides vulgatus, Bilophila wadsworthia, Capnocytophaga ochracea, Dialister pneumosintes, Dichelobacter nodosus, Fusobacterium gonidiaformans, Fusobacterium mortiferum, Fusobacterium necrogenes, Fusobacterium necrophorum, Fusobacterium nucleatum, Fusobacterium varium, Fusobacterium naviforme, Leptotrichia buccalis, Mitsukella multiacidus, Porphyromonas asaccharolytica, Porphyromonas endodontalis, Prevotella bivia, Prevotella buccalis, Prevotella dispens, Prevotella intermedia, Prevotella melaninogenica, Prevotella oralis, Tissierella praeacuta, Cl. argentinense, Cl. histolyticum, Cl. baratii, Cl. bifermentans, Cl. botulinum A or E, Cl. botulinum B, Cl. botulinum C, Cl. butyricum, Cl. cadaveris, Cl. carnis, Cl. cochlearium, Cl. difficile, Cl. glycolicum, Cl. haemolyticum, Cl. indolis, Cl. histolyticum, Cl. chauvoei, Cl. innocuum, Cl. limosum, Cl. malenominatum, Cl. novy A, Cl. novy B, Cl. paraputrificum, Cl. perfringens, Cl. ramosum, Cl. scatologenes, Cl. septicum, Cl. sordellii, Cl. sphenoides, Cl. sporogenes, Cl. subterminale, Cl. tertium, Cl. tetani, Actinomyces gerencseriae, Actinomyces israelii, Actinomyces meyeri, Actinomyces viscosus serovar1, Actinomyces viscosus serovar2, Actinomyces odontolyticus, Bifidobacterium breve, Bifidobacterium longum, Bifidobacterium dentium, Collinsella aerofaciens, Eubacterium contortum, Eggerthella lenta, Eubacterium limosum, Eubacterium saburreum, Eubacterium tenue, Eubacterium tortuosum, Lactobacillus catenaformis, Propionibacterium freudenreichii, Propionibacterium acnes, Propionibacterium avidum, Propionibacterium granulosum, Propionibacterium propionicum, Pseudoramibacter alactolyticus, Acidaminococcus fermentans, Anaerococcus prevotii, Atopobium parvulum, Finegoldia magna, Gemella morbillorum, Megaspheera elsdenii, Micromonas micros, Peptococcus niger, Peptostreptococcus anaerobius, Peptoniphilus asaccharolyticus, Ruminococcus hansenii, Ruminococcus productus, Sarcina ventriculi, Staphylococcus saccharolyticus, Veillonella parvula*



## CANDIDAtest 21

The non-reagent identification kit CANDIDAtest 21, is designed for the routine identification of 34 species of the most clinically relevant yeasts. The kit comes with 21 biochemical tests for each strain (chromogenic substrates, decarboxylase and assimilations), which are placed in 3 rows (triple-strips) of a divided microplate. Three negative control tests are placed on the plate. Each kit of CANDIDAtest 21 contains 5 microplates, i.e. 20 determinations in total.

| Type | Cat. nr. | Product        | Nr. of exam. | Reagent req. | Susp. m. req. |
|------|----------|----------------|--------------|--------------|---------------|
| Kit  | 10010220 | CANDIDAtest 21 | 20           | no           | no            |

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 |   | H<br>NGA  | G<br>α-GLU  | F<br>β-GLU  | E<br>ONC  | D<br>GENA   | C<br>GLU  | B<br>GAL  | A<br>MALA   |
|   | ⊕ |    |    |    |   |    |    |    |    |
|   | ⊖ |    |    |    |    |    |    |    |    |
| 2 |   | H<br>α-GAL  | G<br>PHE  | F<br>URE  | E<br>UCO  | D<br>RHA  | C<br>INO  | B<br>TRE  | A<br>LAC  |
|   | ⊕ |    |    |    |   |    |    |    |    |
|   | ⊖ |    |    |    |    |    |    |    |    |
| 3 |   | H<br>PRO  | G<br>PGUR   | F<br>MEL  | E<br>ACO  | D<br>XYL  | C<br>CEL  | B<br>SUC  | A<br>RAF  |
|   | ⊕ |  |  |  |   |  |  |  |  |
|   | ⊖ |  |  |  |  |  |  |  |  |

















### Code book / MIKROB software:

*Candida africana, Candida albicans, Candida catenulata, Candida dubliniensis, Candida famata I-IV, Candida glabrata, Candida guilliermondii, Candida inconspicua, Candida intermedia, Candida kefyr, Candida krusei, Candida lambica, Candida lipolytica, Candida lusitanae, Candida pelliculosa, Candida membranefaciens, Candida norvegensis, Candida norvegica, Candida parapsilosis, Candida membranefaciens, Candida rugosa/pararugosa, Candida tropicalis, Candida utilis, Candida valida, Cryptococcus albidus, Cryptococcus humicola complex, Cryptococcus neoformans, Cryptococcus terreus, Geotrichum candidum, Geotrichum capitatum, Rhodotorula glutinis, Rhodotorula mucilaginosa, Saccharomyces cerevisiae TRE -, Saccharomyces cerevisiae TRE +, Trichosporon species, Trichosporon species RAF - / MEL -.*

## CANDIDA-SCREEN

The diagnostic kit CANDIDA-Screen is designed to screen 13 of the most frequent clinically significant yeast species. CANDIDA-Screen is placed in wells of a one-strip microtitration plate. Each kit of CANDIDA-Screen contains 3 microplates, i.e. 36 determinations in total.

| Type                            | Cat. nr. | Product                  | Nr. of exam. | Reagent req. | Susp. m. req. |
|---------------------------------|----------|--------------------------|--------------|--------------|---------------|
| Kit                             | 10010269 | CANDIDA-Screen           | 36           | no           | no            |
| Other req. items (not included) | 10003371 | Paraffin oil, sterilized | 40           | -            | -             |

|  |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|
|  |   | H<br>URE  | G<br>SUC  | F<br>MLT  | E<br>LAC  | D<br>GAL  | C<br>TRE  | B<br>CEL  | A<br>PRO  |
|  | ⊕ |  |  |  |  |  |  |  |  |
|  | ⊖ |  |  |  |  |  |  |  |  |

### Code book / MIKROB software:

*Candida albicans, Candida glabrata, Candida guilliermondii, Candida kefyr, Candida krusei, Candida lipolytica, Candida lusitanae, Candida parapsilosis, Candida tropicalis, Cryptococcus neoformans, Geotrichum sp., Saccharomyces cerevisiae, Trichosporon sp.*

## Identification aids

### Code books

Code books contain an organized list of combinations of( +/-) results of individual tests expressed in the form of numeric values – so called profiles. Profiles are arranged in the ascending order according to their numeric value. This system enables rapid orientation in the code book. Even results containing one or two atypical tests for an identified bacterial type can be evaluated correctly. Each profile in the list provides the following data:

- a/** percentage of identification (% id) an estimate saying how closely the profile corresponds to a taxon relative to the other taxa in the data base
- b/** the T-index (Tin) an estimate expressing how closely the profile corresponds to the most typical set of reactions for each taxon. Its value varies between 0 and 1 and is inversely proportional to the number of atypical tests
- c/** the list of the tests against (T.against) – for the first listed taxon, if any, followed by the percentage of positive reactions
- d/** comment, created on the base of the values %id and Tin, defining the level of identification reliability.



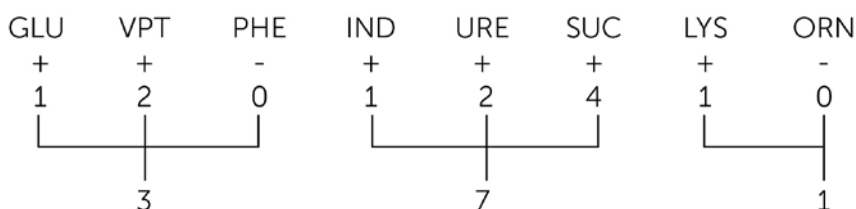
Code book can be downloaded from our website:  
[www.eralachema.com/codebook](http://www.eralachema.com/codebook)

### Profile calculation

Example of profile 371 calculation:

- Separate test results of the strain tested into groups of three
- To each positive test in the group of three, assign the following value of:
  - 1 to the 1st test
  - 2 to the 2nd test
  - 4 to the 3rd test
- Negative test: assign 0 (zero) to all negative test results
- Add up the numeric values in the groups of three
- Resultant number combination forms a profile

Profiles are arranged in the index in the ascending order according to their numeric value; indexes are a part of the instructions of the ENTERO-Screen, EN-COCCUStest kits and CANDIDA-Screen.



Profil 371: *Klebsiella oxytoca*



For advanced, fast, software-aided evaluation of our kits,  
 we recommend to use our MIKROB software.  
 Please see page 34 for details.

## Diagnostic strips

MIKROLATEST® detection strips are plastic strips with a porous zone made of filter paper containing reagent substrate for detection of bacterial enzyme or metabolite. They are a modern alternative to diagnostic discs, they are more user friendly and economical. According to their types, the bacterial culture tested is either rubbed into the reagent zone or the strip is inserted into a tube containing an examined bacterial suspension and cultured. The detection strips are used either together with MIKROLATEST® identification kits for the additional testing or separately. In some cases, additional reagents should be used in order to improve reaction sensitivity. One strip package is sufficient for 50 examinations.

### Features of MIKROLATEST® detection strips:

- user-friendly – easy manipulation without any other aids
- reliable quality – standard and reproducible results
- fast detection – results available within 1 minute, 1-4 minutes or not later than within 48 hours, according to the test and the microorganism type

### MIKROLATEST® detection strips include:

- plastic tube containing 50 pcs of strips
- instructions for use

### Storage:

Detection strips should be stored in a refrigerator at the temperature of +2 up to +8 °C.



## OXItest

## RAPID

OXItest detection strip is designed for the detection of bacterial cytochromoxidase. Its presence is detected by a colour reaction of N,N-dimethyl-1,4-phenylenediamine with  $\alpha$ -naphthol accompanied by formation of indophenol blue. Iron, contained in a cytochrome molecule, is responsible for cytochrome oxidation/reduction process. To avoid the interference due to iron ions, it's necessary to use plastic or platinum loop when carrying out this test.

Reaction sensitivity can be increased by the relevant OXItest reagent: The strip zone is wetted with the reagent without oversaturation and then tested strain is applied. The test is carried out by spreading a pure bacterial culture on the impregnated strip zone or by pressing the strip directly on a bacterial colony on culture medium. Test result is read within 1 minute.

### Reaction interpretation:

|   | OXI Test  |
|---|---|
| + |  |
| - |  |




## Diagnostic strips

### PYRAtest

RAPID

Detection strip PYRAtest is designed for the rapid presumptive determination of enterococci and *Streptococcus pyogenes* by the detection of positive reaction of pyrrolidonylarylamidase enzyme. Bacterial pyrrolidonylarylamidase hydrolyses substrate  $\beta$ -naphthylamid pyroglutamic acid, absorbed in the zone of the detection strip. Hydrolysis is detected by Reagent for PYR test and demonstrated in red coloration. The test can also be used individually as a differential test for the strains of family Enterobacteriaceae and genus *Staphylococcus* or as a supplementary test to identification kits MIKROLATEST®. PYRAtest allows to perform 50 determinations.

#### Reaction interpretation:

|   | PYRA Test   |
|---|---|
| + |   |
| - |    |



**Additional preparations:** Reagent for PYR test

### $\beta$ -LACTAMtest

RAPID

$\beta$ -LACTAMtest is designed for the rapid acidometric detection of bacterial  $\beta$ -lactamase activity. This acidometric method is recommended for testing  $\beta$ -lactamase production by *Neisseria* species, *Haemophilus* species and *Staphylococcus* species. Lactamase enzyme hydrolyses benzylpenicillin contained in the zone of detection strip, and causes color change of pH indicator in the detection zone due to pH shift.

#### Reaction interpretation:



|   | $\beta$ -LACTAM Test  |
|---|---|
| + |  |
| - |  |

### INDOXYLtest

RAPID

Indoxyltest detection strip is designed for rapid detection of acetate-esterase activity of *M. catarrhalis*, *Campylobacter* sp., etc. The test is based on the principle of hydrolysis of the active substrate, i.e. 3-indoxyl-acetate, to the leuco form of indigo. Blue colour of the diagnostic zone is regarded as a positive proof of acetate-esterase activity of the respective microorganism.

#### Reaction interpretation:




|   | INDOXYLtest   |
|---|---|
| + |  |
| - |  |

## Diagnostic strips

### ONPtest

ONPtest is designed for the  $\beta$ -galactosidase detection.  $\beta$ -galactosidase is an intracellular enzyme catalyzing the cleavage of lactose. Lactose fermentation into monosaccharides galactose and glucose is dependent on another enzyme- permease, which is necessary for the penetration of lactose into the bacterial cell. In the absence of permease a  $\beta$ -galactosidase-positive organism will not ferment lactose. In such cases it is advantageous to use ONPtest. Enzyme  $\beta$ -galactosidase hydrolyses the colourless substrate of O-nitrophenyl- $\beta$ -galactopyranoside; the positive reaction is detected by yellow colouring of free O-nitrophenol. The strip is dipped into a defined bacterial suspension and incubated. Reaction can be evaluated within 4, 24 or 48 hours according to the strain type.

#### Reaction interpretation:




|   | ONP Test  |
|---|---|
| + |   |
| - |    |

### HIPPURATEtest

Detection strip HIPPURATEtest is designed for the determination of ability of bacteria to hydrolyse Natrium hippurate. Enzyme Hippurate hydrolase splits Natrium hippurate into glycine and benzoic acid. Glycine liberated by Natrium hippurate hydrolysis is detected by the colour reaction with ninhydrin contained in the Reagent for HIPPURATE test.

The strip is dipped into a defined suspension of a tested strain, incubated 22-24 hours and the Reagent for HIPPURATEtest is added. Reaction is evaluated 5-10 minutes after the addition of reagent. HIPPURATEtest is recommended for the presumptive identification of Group B streptococci, Gardnerella vaginalis and Campylobacter jejuni.

#### Reaction interpretation:

|   | HIPPURATEtest   |
|---|---|
| + |   |
| - |    |

**Additional preparations:** Reagent for HIPPURATEtest

## Diagnostic strips

### COLtest

COLtest is a highly specific test for rapid identification of *Escherichia coli* using detection of  $\beta$ -glucuronidase activity and indole formation. Enzyme  $\beta$ -glucuronidase cleaves 4-methyl-umbelliphenyl- $\beta$ -D-glucuronide (MUG), the 4-umbelliphenon is formed and it shows blue fluorescence under UV light source. Indole formation from L-tryptophan is detected by red colouring after adding the Reagent for INDOLE test. Combination of positive  $\beta$ -glucuronidase and indol reactions shows approx. 95% specificity for *Escherichia coli*. COLtest can also be successfully used for the presumptive identification of enterohaemorrhagic *Escherichia coli* O 157 H:7 with typical combination of negative  $\beta$ -glucuronidase and positive indol reactions.  $\beta$ -glucuronidase test can also be used for the differentiation in other bacterial groups, e.g. staphylococci.

The strip is dipped into a defined suspension of a tested strain and incubated for 4 hours. The preliminary reading of  $\beta$ -glucuronidase reaction under UV-lamp is possible within 1 hour; after 4 hours of incubation the Reagent for INDOLE test is added and indole reaction is visually evaluated.

#### Reaction interpretation:





| Reaction | MUG (fluorescence) | IND (colour reaction) |
|----------|--------------------|-----------------------|
| Positive | blue fluorescence  | red, pink             |
| Negative | no fluorescence    | yellow, yellowish     |

**Additional preparations:** Reagent for INDOLE test, UV lamp

### VPtest

VPtest is designed for the rapid detection of acetoin formation (Voges-Proskauer test). Natrium pyruvate is used as the substrate for acetoin formation. The strip is dipped into a defined suspension of a tested strain and incubated for 2 – 4 hours. After incubation reagents VPT I and VPT II are added and incubation is continued for 30 more minutes. Red colour indicates acetoin formation.

#### Reaction interpretation:

|   | VPtest  |
|---|---|
| + |   |
| - |   |

**Additional preparations:** Reagent for ACETOIN test

| Type                    | Cat. nr. | Product                                   | Nr. of exam. | Reagent req. |
|-------------------------|----------|---|--------------|--------------|
| Diagnostic Strips       | 10003324 | OXtest                                    | 50           | yes          |
|                         | 10003323 | ONPtest                                   | 50           | no           |
|                         | 10003321 | HIPPURATtest                              | 50           | yes          |
|                         | 10003329 | VPtest                                    | 50           | yes          |
|                         | 10003326 | COLtest                                   | 50           | yes          |
|                         | 10003344 | PYRAtest                                  | 50           | yes          |
|                         | 10010232 | $\beta$ -LACTAMtest                       | 50           | no           |
|                         | 10010254 | INDOXYLtest                               | 50           | no           |
| Reagents (not included) | 10003375 | Reagent for OXIDASE test                  | 250          | -            |
|                         | 10003368 | Reagent for HIPPURATE test                | 200          | -            |
|                         | 10003369 | Reagent for ACETOIN test                  | 270/90*      | -            |
|                         | 10003372 | Reagent for INDOLE test (used in COLtest) | 310/70*      | -            |
|                         | 10003379 | Reagent for PYR test                      | 800/130**    | -            |

\* Number of examinations for identification kits / detection strips

\*\* Number of examinations for detection strips / tube method



## Diagnostic discs

Diagnostic discs MIKROLATEST® are discs of filter paper containing a defined concentration of a dehydrated reagent substrate for the detection of specific bacterial activity. They enable simple differentiation of bacteria by means of growth test directly on the culture medium.

### Assortment of discs:

#### BACITRACIN 10 UI

Diagnostic discs BACITRACIN 10 UI are designed for selective isolation of *Haemophilus* spp. The test is based on the resistance of *Haemophilus* spp. to high concentration of bacitracin in comparison with accompanying flora, moreover it demonstrates ability of the satellite growth of *Haemophilus* spp. in the zone of diffusion of exogenous growth factors from staphylococci culture.

#### BACITRACIN S

Diagnostic discs BACITRACIN S are designed for simple routine presumptive determination of  $\beta$ -hemolytic Group A streptococci.  $\beta$ -haemolytic group A streptococci are highly susceptible to low concentration of bacitracin (0.04 UI), thus creating defined inhibition zone around the disc BACITRACIN S. Other  $\beta$ -hemolytic streptococci are resistant to this concentration or show just a very small zone of inhibition.

#### OPTOCHIN

Diagnostic discs OPTOCHIN are designed for simple routine presumptive detection of *Streptococcus pneumoniae*. Test is based on the susceptibility of *Streptococcus pneumoniae* to optochin (ethylhydrocuprein hydrochloride). *Streptococcus pneumoniae* shows a defined zone of inhibition around the impregnated disc after the incubation. Other viridance-group streptococci are resistant to optochin or show a very small zone of inhibition.

#### V+K DISK

Diagnostic discs V+K DISK are designed for the selective isolation of *Neisseria meningitidis*. In the place of diffusion of antibiotics (vancomycin+colistin) from disc, the zone of partially selective medium is created, thus inhibiting the growth of accompanying flora.

#### NOVOBIOCIN

Diagnostic discs NOVOBIOCIN are designed for differentiation of coagulase negative staphylococci by means of growth test. The test is based on the natural resistance of some species of coagulase negative staphylococci to Novobiocin.

#### X – FAKTOR, V – FAKTOR, X+V – FAKTOR

Diagnostic discs X – FAKTOR, V – FAKTOR, X+V – FAKTOR are designed for simple routine differentiation of *Haemophilus* spp. from clinical material. Members of the genus *Haemophilus* are dependent on exogenous growth factors X (hemin) and V (NAD) in media free of these factors. Tested strain shows growth only around the disc containing required essential factor.

#### NITROCEFİN

Diagnostic discs NITROCEFİN are designed for the rapid detection of  $\beta$ -lactamase enzyme in *Neisseria gonorrhoeae*, *Moraxella catarrhalis*, *Staphylococcus* spp., *Haemophilus influenzae* and anaerobic bacteria. Nitrocefın is a chromogenic cephalosporin that has been found to be effective in detection of all known  $\beta$ -lactamase enzymes.  $\beta$ -lactamase enzymes hydrolyse amide bonds in the  $\beta$ -lactam ring of nitrocefın resulting in a distinctive colour change from yellow to red.

## Diagnostic discs

### Advantages of diagnostic discs MIKROLATEST®:

- in combination with other products MIKROLATEST® possibility of complex procedure and rationalization of examination
- simple to use
- cost-saving

| Cat. nr. | Product          | Nr. of exam. |
|----------|------------------|--------------|
| 50001517 | BACITRACIN 10 UI | 100          |
| 50001518 | BACITRACIN S     | 100          |
| 50001522 | OPTOCHIN         | 100          |
| 50001523 | V+K DISK         | 100          |
| 50001697 | NOVOBIOCIN       | 100          |
| 50001519 | V-FAKTOR         | 100          |
| 50001520 | X-FAKTOR         | 100          |
| 50001521 | X+V FAKTOR       | 100          |
| 10010243 | NITROCEFİN       | 50           |

## Products for water microbiology

Beside the products generally applicable for the bacterial identification in all fields of diagnostic microbiology, Erba Lachema s.r.o. provides MIKROLATEST® products developed especially for microbiological examination of water. They are designed for rapid, quantitative presumptive determination of some important bacteria in water by using method of membrane filtration. These products are filter paper discs impregnated with reagent substrate for the detection of specific bacterial activity. The diameter of discs is compatible with the diameter of standard membrane filters. The kits provide 15 determinations.

### mOXItest

mOXItest is designed for rapid quantitative detection of cytochrome oxidase positive bacteria. The presence is detected by a colour reaction of N,N-dimethyl 1.4-phenylenediamine with  $\alpha$ -naphthol, accompanied by formation of indophenol. The test is carried out by transferring a membrane filter with colonies on moistened pad of mOXItest and evaluation of oxidase reactions within 1-2 minutes.

#### Advantages of mOXItest:

- rapid determination – result within 2 min.
- quantitative determination of oxidase positive bacteria in a sample of water
- simple to use

### mCOLItest

mCOLItest is designed for rapid quantitative presumptive detection of Escherichia coli. The principle of the method is based on detection of  $\beta$ -glucuronidase, enzyme characteristic for Escherichia coli. Enzyme  $\beta$ -glucuronidase hydrolyses substrate 4-methylumbelliphenyl- $\beta$ -D-glucuronide, which is contained in nutritive pad mCOLItest. The reaction forms 4-methylumbellipheron that shows blue fluorescence under UV light source.

#### Advantages of mCOLItest:

- rapid determination – result within within 4 h in comparison with standard agar culture
- primary culture of membrane filters on any suitable agar for coliforms
- simple to use

| Cat. nr. | Product       | Nr. of exam. |
|----------|---------------|--------------|
| 10003341 | mOXItest      | 15           |
| 10003342 | mCOLItest     | 15           |
| 50001471 | UV lamp 366nm | -            |

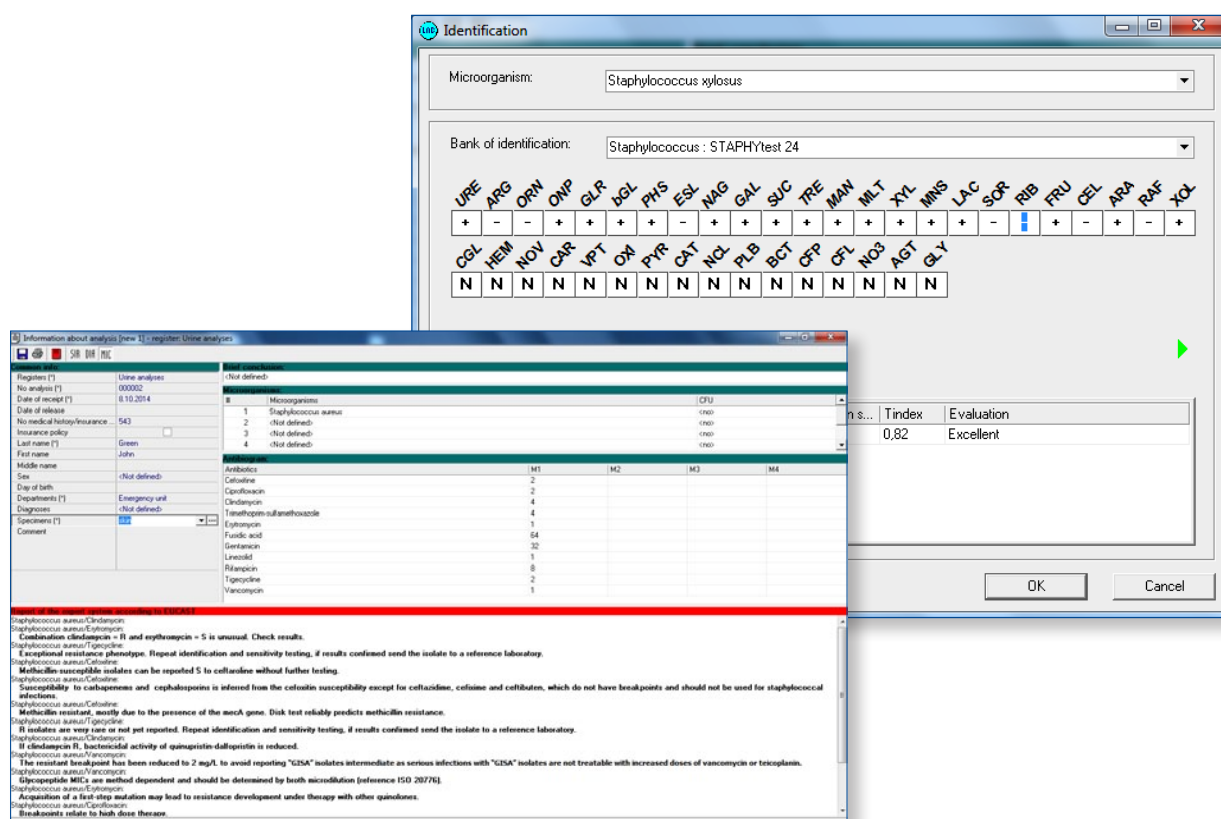
## MIKROB2

**MIKROB2 is a microbiological software developed for the evaluation of MIKROLATEST® ID, MIKROLATEST® MIC and MIKROLATEST® BP kits.**

Except of these basic functions it enables patient data management and statistical and epidemiological analysis. MIKROB2 includes also an expert system, which correlates results of identification and antibiotic susceptibility. Expert system is based on EUCAST and CLSI interpretation rules. User can switch between these two standards according to his/her requirements. Data to MIKROB2 are entered manually. The identification mode contains biochemical tests of MIKROLATEST® ID kits and also other biochemical or morphological characteristics.

The mode for antibiotic susceptibility enables to enter data in three different ways: by a category-susceptible (S), intermediate (I) or resistant (R), when working with MIKROLATEST® BP kit; by minimal inhibitory concentration value when working with MIKROLATEST® MIC or any other MIC system; and by zone size when working with discs. In the last two cases the conversion to the susceptibility category is done according to the chosen standard (EUCAST or CLSI).

The interpretation calls for certain microorganism and antibiotic are displayed after expert system activation. MIKROB2 offers an advanced organisation of your data into „registers“ and smart statistical and epidemiological analyses to reveal trends of resistance to antibiotics among certain bacterial species, in certain period of time and in certain departments or hospitals.



| Cat. nr.  | Product                   | Qty  |
|-----------|---------------------------|------|
| 990-00146 | MIKROB2 - downloadable    | -    |
| 50004340  | MIKROB2 - Installation CD | 1 cd |
| 50004343  | MIKROB2 - dongle          | 1 pc |

## LISASCAN EM & MICROB-AUTOMAT

### LISASCAN EM

**Universal photometer produced by ERBA Mannheim, which can be used for microbiological as well as for immunological applications.**

Optical system: 8 channel fiber optics to measure 8 vertical channels  
 Light source: Tungsten halogen lamp (13,8 V/50W)  
 Detector: Si photodiode  
 Filters: 405, 450, 492, 578, 630, 700 nm  
 Photometric resolution: 0,001 Abs  
 Measurement scale: 0 ~ 3 Abs  
 Accuracy: < 1% at 2.5 OD  
 Operating conditions: 20 – 40 °C  
 Size: 502 x 369 x 216 mm  
 Weight: 7 kg



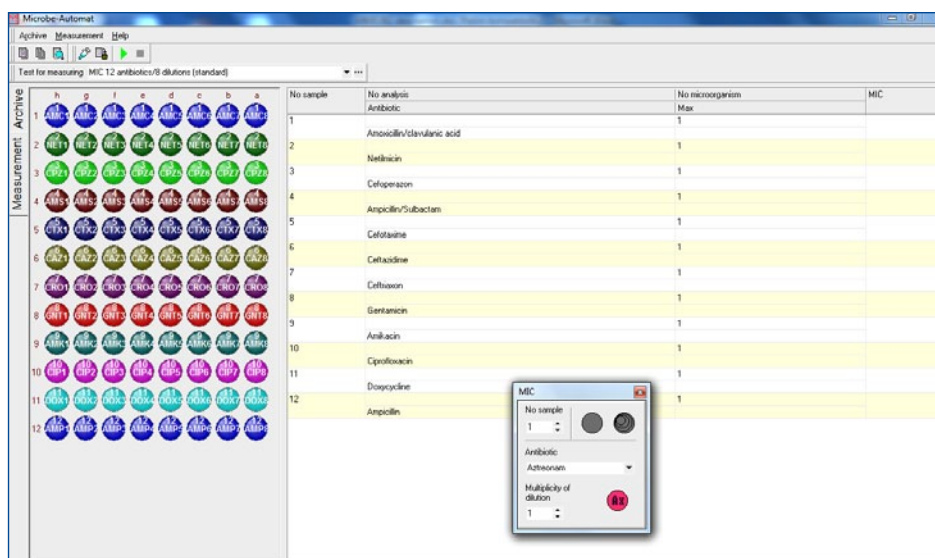
PC requirements:

Pentium IV or higher, 256MB RAM, 100MB HDD space, OS WIN NT/XP/7, LCD monitor at least 24 bit, printer – graphic, mouse, RS232 port

### MIKROB AUTOMAT

**MIKROB-AUTOMAT is microbiological software which is used to control MIKROLA® reader. It allows reading of MIKROLATEST® ID, MIKROLATEST® BP and MIKROLATEST® MIC tests and archiving of the results.**

MIKROB-AUTOMAT communicates with MIKROB2 to which the results can be sent to be evaluated by an expert system or used for statistical or epidemiological analyses if needed. It can however work independently. Except of reading MIKROLATEST® BP and MIKROLATEST® MIC antibiotic susceptibility system, users can create his/her own set of antibiotics to be read by MIKROB-AUTOMAT.



| Cat. nr.  | Product                          | Qty  |
|-----------|----------------------------------|------|
| 51001096  | LISASCAN EM                      | 1 pc |
| 990-00147 | MIKROB AUTOMAT - downloadable    | -    |
| 50004341  | MIKROB AUTOMAT - Installation CD | 1 cd |
| 50004343  | MIKROB - dongle                  | 1 pc |

## Accessories

### DENSILAMETER

Device for determination of bacterial inoculum

Densi-La-Meter II is an easy-to-use optical device specially designed for comfortable and rapid determination of microbial density. Definition of microbial concentration is a very important initial standardizing step in microbial identification, susceptibility testing, as well as for other purposes. The instrument works on the principle of optical absorbance, measured values are displayed directly in McFarland units. The device allows turbidity measurement in a wide range (between 0.0-15.0), and can be calibrated by three points between McFarland 0.5-9.0. Densi-La-Meter II offers customized calibration resulting in wide variety of applicable tube types.



### VORTEX

Vortex is used for homogenization of microbial suspension.

### VIAFLO Vision pipette

Electronic single channel pipettor is designed for fast and convenient work with MIKROLATEST® and SENSILATEST kits

The pipette has a large digital multi-color display and touch wheel menu selector for easier control of individual operations. Electronic pipette is made from light-weight and autoclavable components. A unique Tri-Lobe Tip Interface which provides unmatched tips stability on the pipettes. Tips are extended length designs that enhance access into deep liquid vessels without danger of the pipette body contamination.



| Cat. nr. | Product                            | Qty      |
|----------|------------------------------------|----------|
| 50001529 | DENSILAMETER II                    | 1 pc     |
| 50001530 | Tubes for DENSILAMETER II          | 20 pcs   |
| 50001715 | Vortex                             | 1 pc     |
| 50004297 | VIAFLO Vision pipette 50-1250ul    | 1 pc     |
| 50004298 | VIAFLO Vision adapter              | 1 pc     |
| 50004299 | VIAFLO Vision tips 1250ul, sterile | 5x96 pcs |
| 50004316 | VIAFLO Vision stand                | 1 pc     |







MLT20121001E

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